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Part 1

April 29

to

May 29/95



**THE REGIONAL MUNICIPALITY OF
HAMILTON-WENTWORTH**

Roads Department
Special Projects Office

Class Environmental
Study Report

Stone Church Road

**from Garth Street to East of Upper Mount
Albion Road**

Predesign & Special Projects,
Roads Department

April, 1995



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**CLASS ENVIRONMENTAL ASSESSMENT
STONE CHURCH ROAD RECONSTRUCTION
(from Garth Street to Upper Mount Albion Road)**

NOTICE OF COMPLETION OF ENVIRONMENTAL STUDY REPORT

The Roads Department has completed the environmental assessment study for Stone Church Road and has determined that the best solution for addressing drainage, traffic, and road deterioration problems is to reconstruct the road to three lanes from Garth Street to Pritchard Road, including the following features:

- curbs and gutters;
- sidewalks (subject to City of Hamilton and Local Improvement Act funding);
- wider curb lane for bicycles;
- a centre two-way left turn lane; and,
- upgrading of major intersections, as well as signalization of Upper Sherman Avenue and Ridgemount/Redmond Drives, and provision for future signals at Nebo Road and Dartnall Road.

The section from Pritchard Road to Upper Mount Albion Road will be maintained as a two-lane road with ditches. The gravel shoulders will be paved for bicycles.

This project is being planned under Schedule C as per the process described in the document **Class Environmental Assessment for Municipal Road Projects**. An Environmental Study Report (ESR) has been completed and by this Notice is being placed in the public record for review. The Region intends to begin construction this year if no concerns are raised during this 30 day review, or if all concerns can be resolved through discussion with the Region, and subject to receiving all other necessary approvals. The first stage of construction (1995) is the section from Upper Gage Avenue to Upper Wentworth Street, including signalization of Upper Sherman Avenue.

If, after reading the report, you have questions or concerns, you are encouraged to contact the Region within the 30 day review period (April 29, 1995, to May 29, 1995).

Please direct questions or concerns to:
Region of Hamilton-Wentworth Roads Department
Special Projects Office, 25 Main Street West, 10th Floor, L8P 1H1
Phone: (905)546-4277 Fax: (905)546-2385
Attention: Pamela Hubbard, Environmental Planner, or
Gary Moore, Manager of Engineering

If your concerns cannot be resolved in discussion with the Region, you may request the Minister of Environment and Energy to undergo a more intensive review (called a "bump-up" request). "Bump-up" requests must be received by the Minister at the address below within 30 calendar days of this Notice. A copy of the "Bump-up" request shall also be sent to the Roads Department.

The Honourable C.J. (Bud) Wildman, Minister
Ministry of Environment and Energy
135 St. Clair Avenue West, 15th Floor
Toronto, Ontario M4P 1P5

The Environmental Study Report is available for review at the following locations:

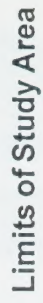
Regional Clerk's Office
119 King Street West, 15th Floor
Hamilton, Ontario
Phone: (905) 546-4154
8:30 a.m. to 5:00 p.m. (Mon.-Fri.)

City Clerk's Office
71 Main Street West
Hamilton, Ontario
Phone: (905) 546-2710
9:00 a.m. to 5:00 p.m. (Mon.-Fri.)

Sherwood Public Library
467 Upper Ottawa Street
Hamilton, Ontario
Phone: (905)546-3249
10:00 a.m. to 9:00 p.m. (Mon./Wed.)
10:00 a.m. to 6:00 p.m. (Tues.)
1:00 p.m. to 9:00 p.m. (Thurs.)
9:00 a.m. to 5:00 p.m. (Sat.)

Special Projects Office
(see address above)
9:00 a.m. to 5:00 p.m. (Mon.-Fri.)

This Notice issued April 29, 1995



**Stone Church Road
from Garth Street to East of
Upper Mount Albion Road**

Class Environmental Study Report

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**Stone Church Road
from Garth Street to East of
Upper Mount Albion Road**

Class Environmental Study Report

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EXECUTIVE SUMMARY

The Regional Municipality of Hamilton-Wentworth initiated this environmental assessment to address problems on Stone Church Road. The project followed the "Class Environmental Assessment for Municipal Road Projects" process for a Schedule C project. That process requires the identification and evaluation of alternative solutions, and provides opportunity for the public to be involved in the decision-making.

Background

Stone Church Road runs from the west end of the City of Hamilton to the west end of the City of Stoney Creek. The road is primarily two lanes with gravel shoulders and ditches. Over the past few years as development has increased in the neighbourhoods adjacent to the road, there has been some upgrading of the road to an urban section (with curbs and gutters) in the west end (from Omni Boulevard to Garth Street) and in the east (between Upper Ottawa Street and Upper Gage Avenue).

The Annual Roads Inventory identified the remainder of the road as having poor pavement. In addition, the drainage ditches do not function adequately or are nonexistent along the section of the road that is still rural in character. The Roads Department Capital Construction Budget identified the need to reconstruct pavement and improve drainage along sections of the road over a five year period.

The purpose of carrying out a Class Environmental Assessment for the entire road is to ensure that an overall plan for the road is developed that can be used as the basis for road reconstruction and land use decisions over the five year Capital Construction Budget period (1995-2000). This is a more efficient process as well because it provides one overall approval for the project instead of requiring each section of the road to undergo an environmental assessment and approval. In addition, the process provides the public with input to the development of the plan.

Vision 2020

The Region has developed long term goals for sustainable transportation through a community driven process called Vision 2020. The transportation goals of Vision 2020 include providing a sustainable transportation system which:

- is environmentally friendly, affordable, efficient, convenient, and accessible;
- meets community needs
- provides for people with disabilities
- provides for the safe movement of the public,
- considers safety in public spaces [security], through planning and design.
- provides access to all areas of the Region, and
- integrates public transit, bicycles, pedestrians, trucks and automobiles.

These goals have been incorporated into the Regional Official Plan. The planning for Stone Church Road is an opportunity to implement the goals.

Public Involvement

Prior to the initiation of this Class Environmental Assessment the public in the area expressed

their concerns with reconstruction of the road to Regional Council in the form of a petition in 1991. The petition requested Council to revise the existing 100 foot road right of way to 66 feet for the purpose of minimizing road reconstruction and maintaining a neighbourhood along the road.

The public have taken the opportunity to be involved in the decision-making of this project and have participated in a number of ways throughout the project. Public concerns can be summarized as the need to maintain and enhance the residential neighbourhood characteristic along the road. Related to this are issues of pedestrian and cycling safety, volumes and speed of traffic, and tree preservation and enhancement. Many other concerns, both property specific and general were raised throughout the project. All comments are documented in the Appendices.

Proposed Plan

The proposed plan includes the reconstruction of the road (within the existing right of way) to three lanes from Garth Street to Pritchard Road with the following features:

- curbs and gutters
- sidewalks (subject to City of Hamilton and Local Improvement Act funding)
- wider curb lanes for bicycles
- a centre two way left turn lane, and
- upgrading of major intersections as well as signalization of Upper Sherman Avenue and Ridgemount/Redmond Drives, and provision for future signals at Nebo Road and Dartnall Road

The section from Pritchard Road to Upper Mount Albion Road will be maintained as a two lane road with ditches. The gravel shoulders will be paved for bicycles.

The section from east of Dartnall Road to Arbour Road will be reconstructed to accommodate the ramp from the Dartnall Road interchange of the Red Hill Creek Expressway and the stormwater detention pond on the north side of the road.

The plan supports the community and Vision 2020 objectives by:

- minimizing road reconstruction (within the existing right of way)
- providing for pedestrians (and those with disabilities) and cyclists on the road
- providing for a tree preservation and landscaping plan to enhance the streetscape
- involving the public in the decision-making

Impacts of the Plan

The main impact of the plan includes the removal of trees, primarily for sidewalk construction. A tree preservation and planting plan is being developed in order to minimize the damage to remaining trees and to compensate for the removal of trees. The public requested involvement in the development of this plan and have participated in workshops. In addition, a number of department and agency representatives have been involved in the development of the plan.

Minimal property is required for road reconstruction and sidewalk construction.

Reconstruction work within the Mount Albion Conservation Area will include consultation with the Niagara Escarpment Commission, the Ministry of Natural Resources and the Hamilton Region Conservation Authority.

1.0 INTRODUCTION

- 1.1 Environmental Study Report
- 1.2 Public Review of the Environmental Study Report
- 1.3 Background
- 1.4 Additional Studies
- 1.5 Study Objectives and Problem Identification

1.0 INTRODUCTION

This Environmental Study Report (ESR) is the result of over two years of planning work. The recommended road reconstruction plan has incorporated the views of the public and government agencies, in addition to municipal mandates, into a plan that will be implemented over the next five years. Given the diverse and sometimes conflicting views of all of the participants, it is not possible to ensure that everyone's concerns are addressed in the way they may want. However, in this project, a concerted effort was made by all parties to understand the issues and ensure that the road plan reflects to the extent possible, both the community's objectives to retain a residential character, and the Regional Roads Department's objectives for providing safe and efficient transportation.

This report includes a description of the preferred road reconstruction plan for Stone Church Road from Garth Street in Hamilton to east of Upper Mount Albion Road in Stoney Creek. Figure 1 shows the location of the road in relation to other roads and features in this area.

1.1 Environmental Study Report

All municipalities are required to comply with the Environmental Assessment Act (EA Act). The requirements of the EA Act can be met by following a planning process outlined in the document "Class Environmental Assessment for Municipal Road Projects" prepared by the Municipal Engineers Association. The Regional Municipality of Hamilton-Wentworth, Roads Department has used this process to conduct this study. The ESR documents the rationale for the project, and the planning, design, and consultation process.

This Environmental Study Report includes the following:

- the background to the project and studies or issues that influenced the planning for the project (Section 1)
- the planning process (Section 2)
- the people involved in the project and how their concerns affected the project (Sections 2 and 5)
- the existing environment including the natural, social, economic, cultural and transportation conditions (Section 3)
- the planning and design alternatives, the evaluation and selection of preferred alternatives (Section 4)
- a description of the preferred road plan, it's potential impacts on the environment, and how those impacts can be reduced (Section 5)
- the construction schedule (Section 5)
- a description of the commitments to be followed during detailed design and construction (Section 5)

1.2 Public Review of the Environmental Study Report

This Environmental Study Report has been filed for a thirty (30) day public review period at the following locations:

- Region of Hamilton-Wentworth Clerk's Office, 119 King Street West, 15th Floor
- City of Hamilton Clerk's Office - City Hall, 71 Main Street West
- City of Stoney Creek Clerk's Office - 777 Highway 8
- Sherwood Library - 467 Upper Ottawa Street

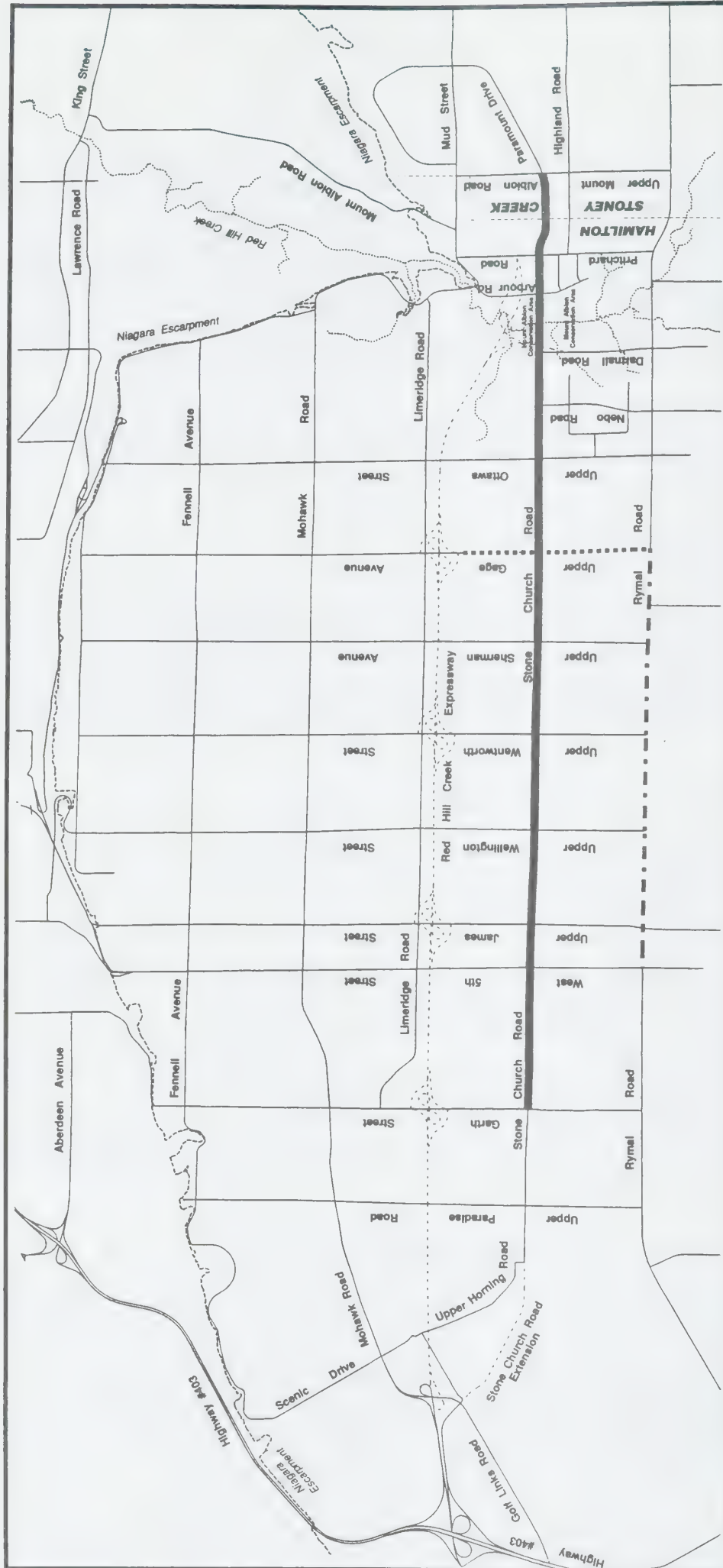


FIGURE 1
LIMITS OF
STONE CHURCH ROAD STUDY

- Stone Church Road E.A. Study Area
- - - Rymal Road E.A. Study Area
- Upper Gage Avenue E.A. Study Area



The public has been notified of the thirty day review period by an advertisement in the Hamilton Spectator, the Hamilton Mountain News and the Stoney Creek News. Any adjacent residents, or person or agency having indicated an interest in the project were notified by letter.

The thirty day review period is from April 28 to May 29, 1995.

If, after reading the document, you have questions or concerns please follow this procedure:

- 1) Contact the following Regional staff to discuss your questions or concerns:

Pamela Hubbard, Environmental Planner, or
Gary Moore, Manager of Engineering
Predesign and Special Projects Office
25 Main Street West
Hamilton, Ontario
L8P 1H1
phone: (905)546-4277
fax: (905)546-2385

- 2) Arrange a meeting with the above staff if you have significant concerns that may require more detailed explanation.
- 3) If you raise serious concerns, the Region will attempt to negotiate a resolution of issues. A mutually acceptable time period for this negotiation will be set. If, at the end of this period the issues remain unresolved, the person or party may make a request to the Minister of Environment and Energy for a more intensive environmental assessment. If this time frame is beyond the thirty day review period, you have an additional 7 calendar days to make a request to the Minister.

If all concerns can be resolved within the thirty days, the Region will have approval to proceed with construction.

1.3 Background

The Mountain (the area above the Niagara Escarpment) of Hamilton and Stoney Creek has been undergoing significant development over the past few years and is expected to continue to develop. The following is a description of major policies, plans, and development studies that have influenced the planning for this project:

Red Hill Creek Expressway (East-West Mountain Section)

The East-West Mountain section of the Expressway is being constructed north of, and parallel to, Stone Church Road. This section of the Expressway runs from Highway 403 to Dartnall Road. It will be a four lane road with controlled access at interchanges at Golf Links/Mohawk Road, Garth Street, Upper James Street, Upper Wentworth Street, Upper Gage Avenue and Dartnall Road. This section of the Expressway is expected to open in 1998.

The Expressway will carry traffic crossing the Mountain to access adjacent municipalities, the Highway 403 and eventually, the Queen Elizabeth Way (QEW). A review that is currently underway will result in an alignment for the section that will connect to the QEW.

All traffic entering or exiting the Expressway at Dartnall Road will be directed to the intersection of Stone Church Road and Dartnall Road, at the Mount Albion Conservation Area. This will require a realignment of Dartnall Road at Stone Church Road. The Expressway will also require a stormwater retention pond in this area resulting in the need to raise the existing profile of Stone Church Road in this location by 2.5 - 3 m.

Stone Church Road Extension

As a result of the Expressway construction, Upper Horning Road will be closed at the Expressway. As an alternate, Stone Church Road will be extended to connect with the Interchange at Golf Links Road and Mohawk Road. This work will be completed in 1995.

Rymal Road Widening

A Class Environmental Assessment has been undertaken for the reconstruction of Rymal Road. The proposed plan for this road includes additional lanes and traffic signal timing changes at the intersection of Upper James Street and Rymal Road and a two way left turn lane for the section from Springside Drive to Upper Gage Avenue. The section from east of West Fifth Avenue to Springside Drive will be constructed in 1995, pending approval of the Class Environmental Assessment Study.

Upper Gage Avenue Reconstruction

A Class Environmental Assessment Study was approved in 1992 for the reconstruction of Upper Gage Avenue to five lanes from Thorley Drive to Rymal Road. The construction of Thorley Drive to south of the Expressway is complete. The section from the Expressway to Stone Church Road will be constructed in 1995.

Vision 2020

Vision 2020 is a strategy developed by the Region with extensive community input. It describes the Region in the Year 2020 if we follow the principles of sustainable development. The Vision describes an integrated transportation system that serves the Region in an affordable, efficient and accessible way. It envisions public streets that are designed and managed to accommodate public transit, cyclists, pedestrians and automobiles in a complementary way.

Regional Transportation Review

Based on the transportation objectives of Vision 2020, this review identifies how the Region can encourage and build a sustainable transportation system. The study includes a projection of traffic volumes using three different development scenarios. This Review will be completed in 1995.

Annual Road Needs Inventory

Regional roads are assessed on an annual basis to determine their condition and if they should be added to the list of potential projects for reconstruction. Most of Stone Church Road has been assessed as having poor pavement condition.

Community Views

The public expressed their views about road widenings on Stone Church Road in 1991 through a petition to Council. Approximately 275 people signed the petition to keep the road the way it is and not to encourage additional traffic on the road. Through public consultation for this project, the public has continued to express their views about the need to address road problems in a way that is sensitive to and enhances the community and the character of the road.

1.4 Additional Studies

This project used information and data from studies carried out for other projects in addition to those mentioned above including:

- Hamilton-Wentworth Bicycle Implementation Plan (1992) - a plan outlining a Regional Bicycle Network.
- Hamilton-Wentworth Natural Areas Inventory Plan (1994) - an inventory of the natural features in environmentally sensitive areas in the Region.
- Geotechnical Sampling along Stone Church Road - borehole samples taken along and adjacent to Stone Church Road. They provide information on the depth and type of soils, depth to bedrock, as well as the groundwater elevation.
- Fisheries Habitat Assessment for Red Hill Creek (C. Portt and Associates, 1991) - study carried out to determine the type of fish using the Red Hill Creek and the type of habitat available for fish.
- Dartnall Road Interchange (1994/95) - Wetland Creation and Stormwater Management - design work for construction of this interchange.

As part of this project, the Region also carried out the following studies:

- tree inventory for trees adjacent to the road (Arbor Consultants, 1992)
- traffic analysis (in-house)
- landscaping master plan and tree inventory update (Landplan Collaborative Ltd., 1995)

1.5 Study Objectives and Problem Identification

Based on the above background studies and Regional policies, the justification for this project is based on the need to address road deficiencies identified in the Annual Roads Inventory as well as to ensure that the function of the road reflects future needs based on projected land uses and Regional policies. Stone Church Road should also complement the function of adjacent arterial roads.

The objectives of this study are:

- to upgrade the road to address the problems identified in the Roads Needs Inventory;
- to ensure that the road will meet the future needs of the community;
- to enhance the character of the road;
- to incorporate Vision 2020 principles of providing a facility for all types of transportation including pedestrians and cyclists; and,
- to preserve as many trees/landscaping as possible.

The problems identified in this study included:

- Poor drainage as a result of the inconsistent ditch system. Ditches have been filled in or have not been maintained and this has resulted in stormwater runoff onto adjacent properties.
- The road pavement is in poor condition.
- Numerous entrances along the road result in congestion when drivers are turning left.
- Some intersections are unsignalized and others are not marked clearly and are congested.
- There are no sidewalks for pedestrians along most of the road. This is a particular problem for seniors and children.
- There is no space for cyclists on the road. The narrow lanes and continuous traffic discourage cyclists from using the road.

In addition to the above problems, the public indicated that speeding is a problem.

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2.0 CLASS ENVIRONMENTAL ASSESSMENT PROCESS

- 2.1 Schedule of Road Projects
- 2.2 Planning Process
- 2.3 Project Organization
- 2.4 Regional, Municipal, and Agency Involvement
- 2.5 Public Consultation

2.0 CLASS ENVIRONMENTAL ASSESSMENT PROCESS

The purpose of a Class Environmental Assessment is to promote the protection and conservation of the environment through comprehensive planning and informed decision-making. It allows for the evaluation of the environmental effects of alternatives to a project and alternative methods of carrying out a project. Public consultation is mandatory at three points in the process: study notice commencement and review of solutions; review of design solutions; and, review of the Environmental Study Report.

Environment is defined in the Environmental Assessment Act as:

- air, land and water;
- plant and animal life including humans;
- the social, economic and cultural conditions that influence the life of humans or the community;
- any building, structure, machine or other device or thing made by humans;
- any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of humans; and,
- any part of the foregoing and the interrelationships between any two or more of them in or of Ontario.

2.1 Schedule of Road Projects

Municipal road projects are divided into three schedules or classes depending on their expected level of impact:

Schedule A Projects:

- limited in scale
- have minimal adverse impacts
- require no documentation or public notification

Examples: road paving, snow removal, emergency repairs

Schedule B Projects:

- exhibit potential for some adverse impacts
- require that a planning process be followed
- require mandatory contact with directly affected public
- require a submission of project file for public review

Examples: new culverts, minor reconstruction

Schedule C Projects:

- exhibit potential for a number of adverse effects
- require that a planning process be followed
- require mandatory public notification
- require submission of an Environmental Study Report for public review

Examples: new roads, road widenings

This project has been identified and planned as a Schedule C because the addition of a lane results in road widening.

2.2 Planning Process

The Region has followed the Class Environmental Assessment planning process shown in Figure 2. The following is a brief explanation of this process.

Phase I Problem Identification

This phase includes identifying all of the current problems with the road based on the Annual Roads Needs Study, the collision record, existing and projected traffic volumes, and consultation with other municipal departments, agencies and the public.

Phase II Planning Solutions

In this phase, all reasonable solutions to the problems are identified and evaluated and a solution is chosen. Since there is usually more than one way to solve a problem, these solutions are compared to determine which solution best meets the objectives of the study. The best solution is carried forward into the design phase. In addition to evaluating options, data and information about the environment is collected to assist in comparing the solutions. A preliminary evaluation of the solutions is presented to the public and agencies and their comments are taken into consideration before a solution is chosen.

Phase III Design Alternatives

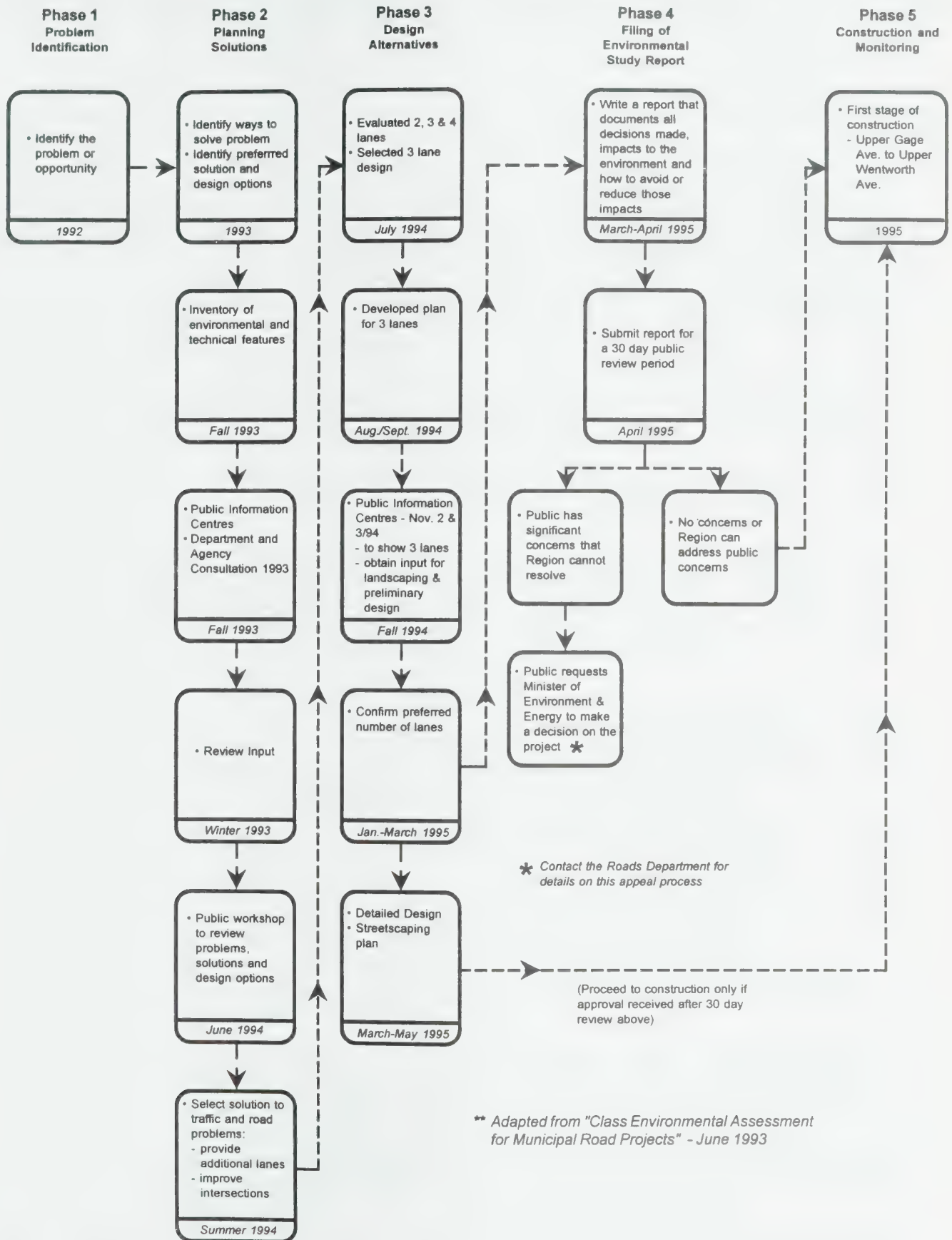
After the planning solution is chosen, the design alternatives are developed. Just as there is usually more than one way to solve a problem, there is more than one way to design a road. Alternatives are evaluated and compared, additional data may be collected and the most reasonable alternative is identified. Again, the public and agencies are invited to review the evaluation of alternatives and to comment on the process and to help select the preferred alternative.

The process of comparing planning solutions and design alternatives sometimes requires trade-offs between providing a safe and efficient transportation system and impacts to the environment. In all cases, the objective is to select an alternative that minimizes impacts to the environment and meets the transportation objectives. The public has the ability to influence this decision-making by reviewing the work prepared for each phase and by providing information that will be useful in the evaluation.

Phase IV Environmental Study Report

In this phase, the decision-making process, the preferred plan and the associated impacts are documented for the public to review. The document serves as the plan for any future road construction defined by the study. Commitments made in this document are legally binding on the municipality.

FIGURE 2: Class Environmental Assessment Planning Process **



** Adapted from "Class Environmental Assessment for Municipal Road Projects" - June 1993

Phase V Construction and Monitoring

Following approval of the Class Environmental Assessment, detail designs and contract documents are completed based on the plan in the Environmental Study Report (ESR). The commitments made in the ESR, to be fulfilled during construction are carried out in this phase.

2.3 Project Organization

This project was managed by the Predesign and Special Projects Division (SPO), of the Regional Municipality of Hamilton-Wentworth's Roads Department. This office is responsible for coordinating all aspects of the planning and preliminary design. The personnel involved in the study included: engineers, an environmental planner, a graphics technician, a transportation technologist and a transportation clerk.

In addition to Regional staff, the following consultants provided expertise at specific phases of the study:

Arbor Consultants - tree inventory and analysis (1992) - Phase 2
 L. Graff & Associates - facilitation of a public workshop (1994) - Phase 2
 W. Sears Engineering - functional design (1992) - Phase 2
 Landplan Collaborative Ltd. - landscape master plan (in progress) Phase 3 & 5

2.4 Regional, Municipal and Agency Involvement

The SPO was assisted at all phases of the study by the following group of Region of Hamilton-Wentworth, City of Hamilton and agency representatives, who requested (or were requested by SPO) to be actively involved as part of a Study Team. The Study Team met at key decision points to assess and recommend options based on information developed by SPO and results of public consultation.

Region of Hamilton-Wentworth

Roads Department:

- Programming, Maintenance and Development Division

Planning (Local Branch):

- Policy and Neighbourhood Planning

Planning (Regional Branch)

- Strategic Planning Division

Hamilton Street Railway

- Transportation Services

Environmental Services

- Infrastructure Planning

City of Hamilton

Public Works Department:

- Streets and Sanitary Services
- Parks, Horticulture

Traffic Department

Hamilton Region Conservation Authority

Niagara Escarpment Commission

Table 1 lists all of the departments and agencies that were notified of the project and describes how they were involved in each phase of the project. Notice of Study Commencement and requests for desired levels of involvement are included in Appendix B.

Regional Councillors were notified of each Public Information Centre and workshop. They also were provided with Information Reports following each public forum. Council approved that the project report should be filed for public review.

2.5 Public Consultation

The planning process for Class EAs indicates key areas when the public must be consulted during Phase 2, 3, and 4. In addition, the proponent (in this case, the Region) has the option of providing additional types of consultation. The following is a summary of the consultation carried out for this project (see Appendices B, C, and D for copies of advertisements, brochures, information packages and public comments):

Phase I - Problem Identification *Notice of Study Commencement*

A notice was placed in the Hamilton Spectator and the Mountain News to advise the public of the study start-up.

Comments were received from the public by phone and mail.

Phase II - Planning Solutions *Public Information Centres*

Dates: November 29 and December 2, 1993

Purpose: to present the problems and possible planning solutions to the public. The preferred solution was indicated. Possible design solutions were also presented. (Section 4.0)

Notification:

- newspaper advertisements in the Hamilton Spectator and the Mountain News
- approximately 7000 notices were mailed to residents and landowners adjacent to the road. (See Figure 3)

Attendance: 95

Additional input was received by phone from people who could not attend the meeting.

Overall Response by Public: The public expressed a significant concern with any proposed changes to the road. The majority of people did not want construction of a wide road. They expressed concerns about losing community character through loss of trees, speeding as a result of wider roads, and decreased safety. They also agreed with many of the problems identified by the Roads Department and indicated specific areas of concern along the road.

TABLE 1: Agency and Municipal Involvement

Agency/Department	Phase I: Problem Identification	Phase II: Planning Solutions	Phase III: Design Alternatives
Hamilton Street Railway (Transportation Services Division)	- requested active involvement in decision-making - attended meeting to identify problems	- attended Phase II strategy meeting - wrote memo to SPO confirming future plans for bus service along road and how this may impact decision-making - received notice of Public Information Centre #1 - attended Public Information Centre #1 - received Project Update announcing public workshop	- wrote memo stating preference for pedestrian provisions - received Project Update/notice of Public Information Centre #2 - attended meeting to follow-up on public comment received at Public Information Centre #2 - received announcement of landscaping workshops
Roads Department- Regional Municipality of Hamilton-Wentworth (Programming and Maintenance Division)	- requested active involvement in decision-making - attended meeting to identify problems	- attended Phase II strategy meeting - attended meeting for cross-section evaluations - received notice of Public Information Centre #1 - attended Public Information Centre #1 - received Project Update announcing public workshop	- attended meeting to review status of project and determine future actions - received Project Update/notice of Public Information Centre #2 - attended meeting to follow-up on public comment received at Public Information Centre #2 - received memo about public concern for construction scheduling - received announcement of landscaping workshops

TABLE 1: Agency and Municipal Involvement (Continued)

Agency/Department	Phase I: Problem Identification	Phase II: Planning Solutions	Phase III: Design Alternatives
Traffic Department- City of Hamilton	- requested by Special Projects Office to have active involvement in decision-making - attended meeting to identify problems	- attended Phase II strategy meeting - attended meeting for cross-section evaluations - received notice of Public Information Centre #1 - attended Public Information Centre #1 - received Project Update announcing public workshop	- attended meeting to review status of project and determine future actions - received Project Update/notice of Public Information #2 - attended meeting follow-up on public comment received at Public Information Centre #2 - attended Public Information Centre #2
Public Works Department- City of Hamilton Parks and Horticulture Division	- requested by Special Projects Office to have active involvement in decision-making - attended meeting to identify problems	- received notice of Public Information Centre #1 - attended Public Information Centre #1 - received Project Update announcing public workshop	- received Project Update/notice of Public Information centre #2 - attended Public Information Centre #2 - attended meeting follow-up on public comment received at Public Information Centre #2 - received notice announcing landscaping workshops
Public Works Department- City of Hamilton Streets and Sanitation Division	- requested by Special Projects Office to have active involvement in decision-making - attended meeting to identify problems	- attended Phase II strategy meeting	- attended meeting to review status of project and determine future actions

TABLE 1: Agency and Municipal Involvement (Continued)

Agency/Department	Phase I: Problem Identification	Phase II: Planning Solutions	Phase III: Design Alternatives
Hamilton Wentworth Roman Catholic School Board		- wrote letter to SPO replying to request for information: bus routes - attended meeting to discuss school bus routes within study area - received notice of Public Information Centre #1	- received Project Update/notice of Public Information Centre #2
Hamilton Hydro	- attended meeting to discuss utility agency concerns		- attended Public Information Centre #2
Southmount Cable	- attended meeting to discuss utility agency concerns		- received Project Update/notice of Public Information Centre #2
Trans-Northern Pipelines	- wrote letter to SPO listing concerns	- wrote letter to SPO explaining location of pipeline	- received Project Update/notice of Public Information Centre #2 - wrote letter to SPO indicating no concerns
Heritage Policy Branch- Ministry of Culture, Tourism and Recreation	- wrote letter to SPO indicating their required involvement	- telephoned SPO requesting location of study area - received notice of Public Information Centre #1	- received Project Update/notice of Public Information Centre #2 - received letter and copy of preferred design plans for their comments - wrote letter to SPO listing concerns and comments as a result of viewing plans
Planning and Development Department- Regional Municipality of Hamilton-Wentworth Regional Planning Branch	- requested to be kept informed of the project status	- wrote memo to SPO to respond to request for information: land use etc. - received notice of Public Information Centre #1 - received Project Update announcing public workshop	- received Project Update/notice of Public Information Centre #2

TABLE 1: Agency and Municipal Involvement (Continued)

Agency/Department	Phase I: Problem Identification	Phase II: Planning Solutions	Phase III: Design Alternatives
City of Stoney Creek- Planning Department	- requested to be kept informed of the project status	- received notice of Public Information Centre #1 - received Project Update announcing public workshop	- received Project Update/notice of Public Information Centre #2 - received notice of landscaping workshops
City of Stoney Creek - Engineering Department-	- requested to be kept informed of the project status - wrote letter to SPO listing concerns	- received notice of Public Information Centre #1 - received Project Update announcing public workshop	- received Project Update/notice of Public Information Centre #2 - received notice of landscaping workshops
Hamilton-Wentworth Regional Police	- requested to be informed of road closures	- provided pamphlets on senior citizens' pedestrian safety - received notice of Public Information centre #1	
Hamilton Fire Department	- requested to be kept informed of the project status	- received notice of Public Information Centre #1	- received Project Update/notice of Public Information Centre #2
Ministry of Environment and Energy	- requested to be kept informed of the project status		- received Project Update/notice of Public Information Centre #2 - received letter and copy of preferred design plans for their comments
Recreation Division- Ministry of Culture, Tourism and Recreation	- requested no further involvement		
Ministry of Municipal Affairs	- requested no further involvement		
Ministry of Government Services	- no response to request for their desired level of involvement		
Ministry of Community and Social Services	- no response to request for their desired level of involvement		

TABLE 1: Agency and Municipal Involvement (Continued)

Agency/Department	Phase I: Problem Identification	Phase II: Planning Solutions	Phase III: Design Alternatives
Ministry of Housing	- no response to request for their desired level of involvement		
Ontario Hydro	- no response to request for their desired level of involvement		
Economic Development Department- Regional Municipality of Hamilton-Wentworth	- no response to request for their desired level of involvement		

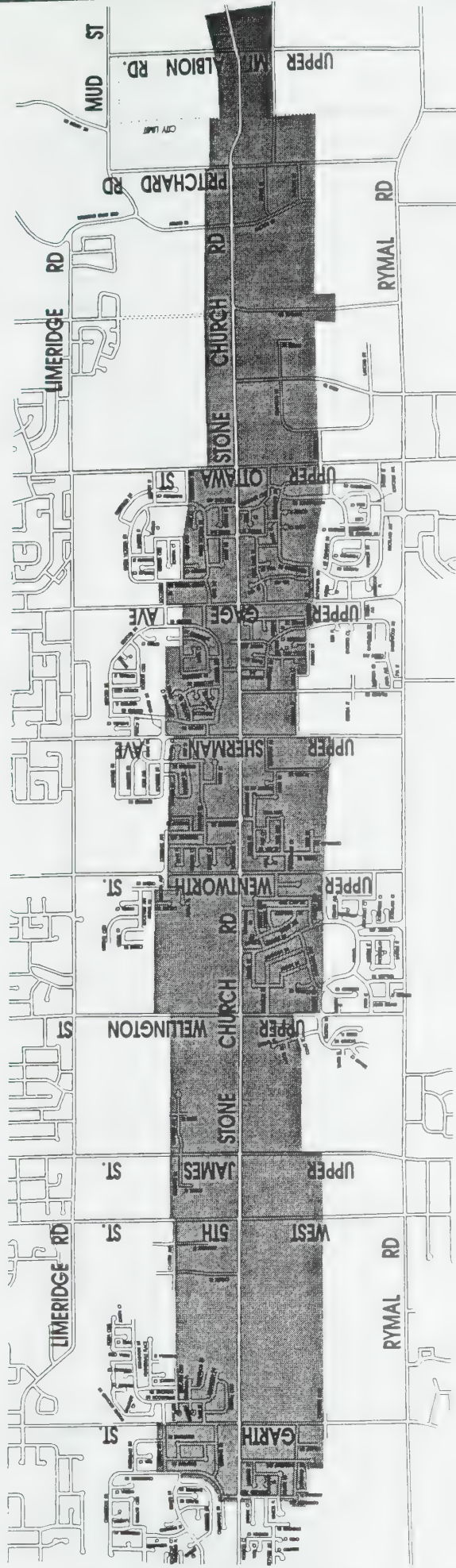


FIGURE 3

DISTRIBUTION AREA



STONE CHURCH ROAD
DISTRIBUTION AREA FOR
DIRECT MAILING NOTIFICATION

Phase II -

Regional Follow-up:

Comments were assessed by the Region. A Project Update newsletter was prepared and distributed (circulation of 7,000). It responded to the issues raised at the information centres and invited the public to attend a workshop.

Public Workshop

Date: June 8, 1994

Purpose: to provide information to the public on how roads are planned and designed, to provide an opportunity for the public to evaluate the planning options in detail, and recommend a solution.

Notification: Approximately 7000 notices were mailed to residents and landowners adjacent to the road and any additional members of the public who expressed an interest in the project.

Attendance: 44

Overall Response by Public: Participants made recommendations on the type of road that should be constructed, the number of lanes and the features that would be acceptable for pedestrians and cyclists (see Sections 4.0 and 5.0 for summary of issues and comments).

Phase III

Design Solutions

Public Information Centres

Dates: November 2 and 3, 1994

Purpose: to present the design alternatives (options for number of lanes to widen), the alternative that the Region preferred based on previous public input and transportation needs, and to obtain public comments.

Attendance: 80

Notification: newspaper advertisements in the Hamilton Spectator, the Mountain News, and the Stoney Creek News.

Public Response: There was overall support for the plan, however, there was concern expressed about the construction scheduling for the section between Wellington Street and West Fifth Street, especially the Upper James Street intersection.

Public Workshops

Dates: March 1 and 2, 1995

Purpose: As part of the follow-up to concerns with the potential loss of trees and the character of the road, the Region retained a landscape architect consultant to prepare a landscape master plan. Two workshops were held to allow the adjacent property owners and residents an opportunity to provide input into the development of the master plan and to assist in evaluating two options for planting along the road.

Attendance: approximately 60

Phase III - Notification: 1700 directly adjacent property owners and residents were invited to attend. In addition, any public from the last public information centres who requested involvement were invited.

Response by the Public: The public appreciated the opportunity to review the plans. Overall, there is support for a landscape planting scheme that reflects the existing pattern of tree planting.

In addition to the above opportunities to be involved in the project, the public also talked to staff by phone or through visits to the office.

Phase IV - **Filing of the Environmental Study Report**

The residents and property owners adjacent to the road have been notified by mail of the completion of the Environmental Study Report. The general public is notified by advertisements placed in the Hamilton Spectator, the Mountain News and the Stoney Creek News.

The public is encouraged to contact the Roads Department to discuss any concerns or to have questions answered.

Phase V - **Construction**
Public Information Centre

Dates: early to mid-June

Purpose: As part of the preconstruction public consultation, the public will be invited to view the final Streetscaping Master Plan and the Detail Design.

Notification: newspaper advertisements in the Hamilton Spectator and Mountain News, direct mailing to residents and property owners adjacent to the road.

Adjacent property owners and residents are provided with advance notice of construction and changes to access to their driveways.

All of the comments received at information centres, workshops, and by mail and by phone are included in the Appendices. Section 4 describes how public input affected decision-making throughout the project. Table 9, in Section 5, lists all of the issues raised during the process and shows how they have been incorporated into the project.

3.0 EXISTING ENVIRONMENTAL FEATURES

- 3.1 Study Area
- 3.2 Natural Environment
- 3.3 Cultural Environment
- 3.4 Socio-Economic Features
- 3.5 Utilities and Municipal Infrastructure
- 3.6 Transportation Facilities and Traffic Operations
- 3.7 Sidewalks and Pedestrian Crossings
- 3.8 Bicycle Facilities

3.0 EXISTING ENVIRONMENTAL FEATURES

This section describes the existing characteristics of the area including the natural, social, cultural, economic and transportation/infrastructure features. Features of the environment that are considered to be important for decision-making and for the community have also been identified in this Section.

3.1 Study Area

The area where road improvements are being proposed is between Garth Street in Hamilton and east of Upper Mount Albion Road in Stoney Creek. Where there are intersections, the area of the intersecting street that could be affected by the road project is also included in the study area. The study area is the road right-of-way and the area that could be directly affected by the project. However, there are areas of the environment that may be indirectly affected and these are described in this section as well. Figure 4 shows the features of the area in detail.

3.2 Natural Environment

3.2.1 Mount Albion Conservation Area

Stone Church Road crosses the Mount Albion Conservation Area in the east section of the Mountain. This area is designated a Niagara Escarpment Protection Area and the majority of the area is owned by the Hamilton Region Conservation Authority (see Figure 4, Sheet 17 & 18). The Conservation Area has been inventoried for natural environment features, and described in the Hamilton-Wentworth Natural Areas Inventory (1993) report as part of the Red Hill Creek Escarpment Valley. That report indicates that the Mount Albion Conservation Area is considered to be a life science area of local significance. It is also designated an Environmentally Significant Area in the Region of Hamilton-Wentworth Official Plan.

The Red Hill Escarpment Valley has been designated an Environmentally Significant Area for the following reasons (Natural Areas Inventory Study, 1993):

- it serves an important ecological function as a large green space area which includes the intersection of two natural corridors (Red Hill Creek and Escarpment);
- it exhibits a high diversity of abiotic features;
- it includes significant earth science features (Earth Science Area of Regional Significance). Groundwater recharge is likely occurring in the areas of shallow soils and along the moraines above the Escarpment; and,
- it provides habitat for significant wildlife and plant species (a number of rare and endangered species of vascular plants, one rare butterfly, six uncommon and two rare bird species).

The north side of the road is owned by the Region of Hamilton-Wentworth and the Hamilton Region Conservation Authority. It will be undergoing a transition from a recreational/natural area to an interchange and stormwater detention pond associated with the Red Hill Creek Expressway.

Natural features of the site are discussed in the following sections.

Important Considerations:

- Permits are required from the Niagara Escarpment Development Commission for work within an Escarpment Protection Area. Development must conform to the Niagara Escarpment Plan policies.
- Permits are required from the Hamilton Region Conservation Authority for work within a regulated floodplain and for placing fill within a floodplain.
- The road right-of-way is adjacent to a Regional Environmentally Significant Area. Development must show no adverse effect on the significant features of this area.

3.2.2 Surface Water

The relief and drainage of the area above the Niagara Escarpment is to some extent controlled by the resistant dolomite bedrock which underlies the whole area. In general the area is relatively flat with water draining north-east in the east end of the Mountain and north-west in the west end of the Mountain.

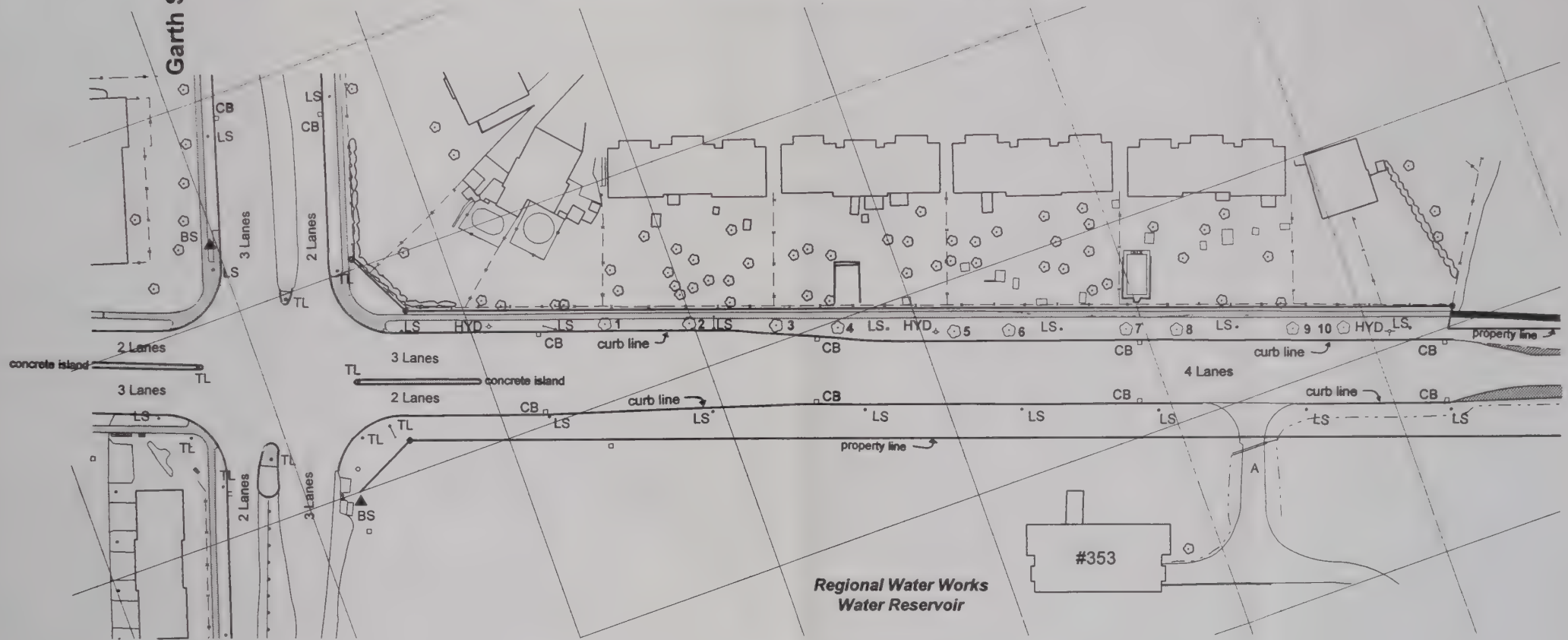
In a very broad perspective drainage is achieved by water from a catchment being accepted by creeks and rivers that direct it to larger bodies of water (in this case Lake Ontario). A catchment is usually defined by topography (i.e., water runs down hill) but is the area that collects water which eventually discharges to a creek or river. Precipitation that does not infiltrate the ground is conveyed by either storm sewers or open ditches to a creek/river or one of its tributaries.

Stone Church Road traverses two catchments on the Mountain: the Area Tributary to the Red Hill Creek; and the West Mountain Area Tributary (Figure 5). The majority of Stone Church Road from Garth Street to immediately east of Upper Mount Albion Road ultimately drains to the Red Hill Creek. There is a very small section of the study area, from Garth Street to about 200 m east of Garth Street that is in the West Mountain Area Tributary and drains to the Fennell Avenue trunk sewer.

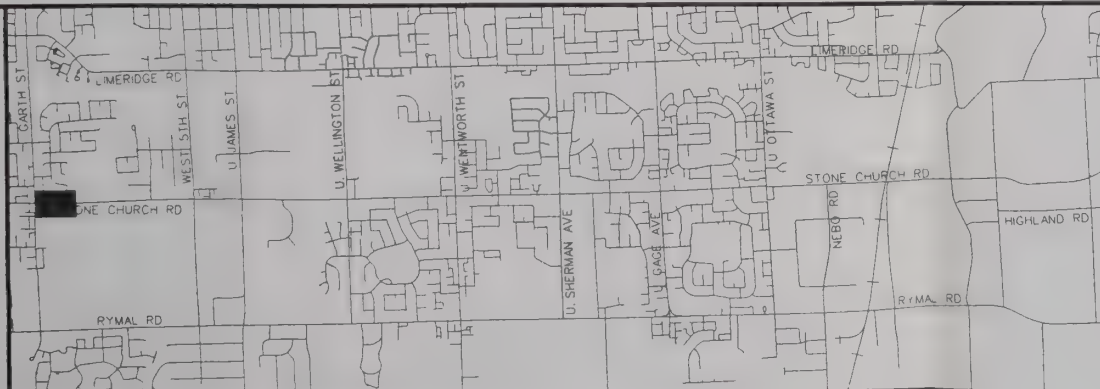
Drainage is achieved through the use of either open ditches or storm sewers or some combination of both. Open ditches are usually associated with rural and agricultural areas, whereas storm sewers are traditionally installed in conjunction with commercial and residential development. This is the case for Stone Church Road and the surrounding areas. For the most part, the westerly tributaries to the Red Hill Creek (i.e., the area under study) have been channelized and sewered in conjunction with development. These westerly tributaries of the Red Hill Creek change from a channelized underground system to an open stream east of Upper Ottawa Street.

In addition to accommodating surface water that collects on the road, it is necessary to consider the conveyance of surface water from the part of the catchment south of Stone Church Road across the road. In the west end of the study area only one surface drainage crossing has been identified. It appears to be seasonal and related to stormwater runoff. The east end of the study area includes the Red Hill Creek tributary flowing north, under Stone Church Road and connecting with the main tributary of the Creek. A detailed assessment of the existing and expected quantity of water in this stream has been developed as part of the hydrological modelling associated with the Red Hill Creek Expressway (Phillips Engineering 1989 and ongoing). There are a number of seasonal or storm related drainage swales crossing Stone Church Road east of Pritchard Road in culverts. The characteristic of this area is agricultural and the streamflow here represents drainage swales related to that use.

Garth Street



LOCATION MAP



A

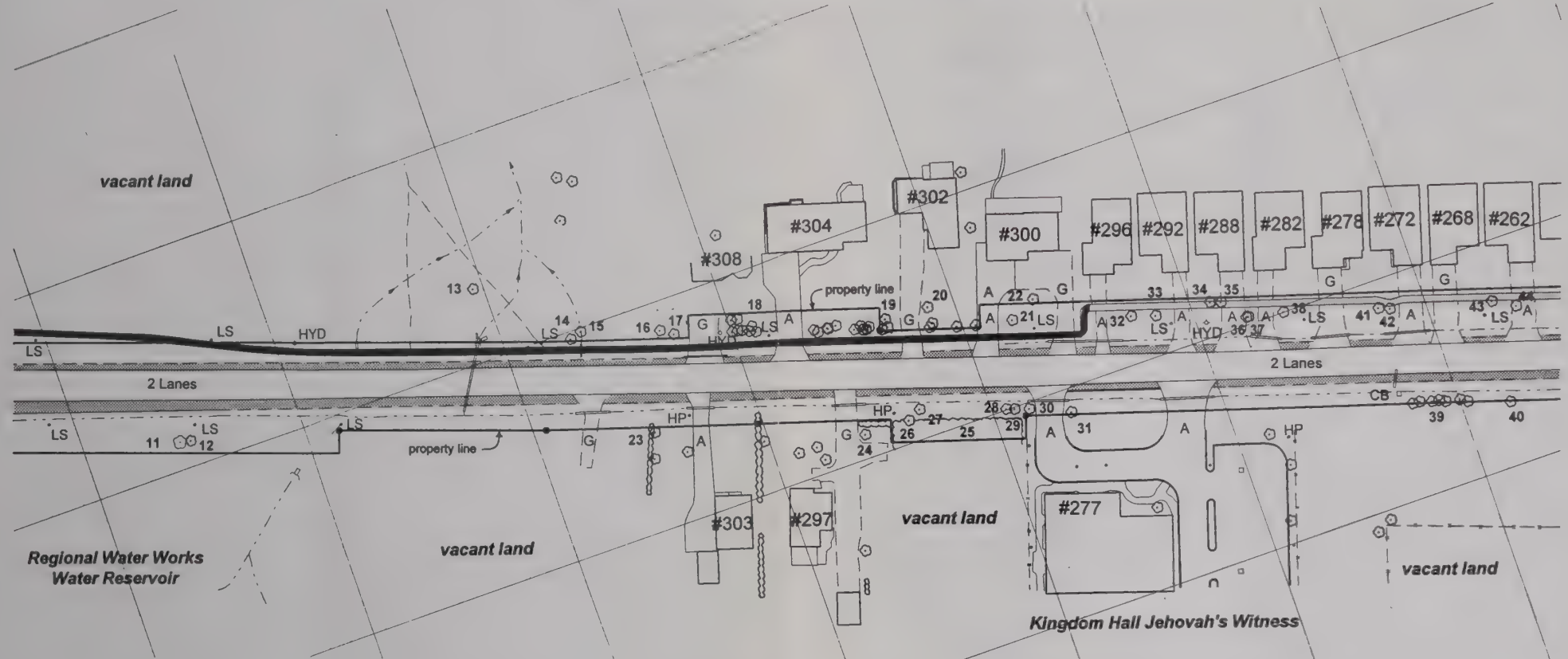
	Asphalt entrance or driveway
	Gravel shoulder
	Concrete sidewalk & traffic island
	Asphalt path
	Ditch & drainage course
	CB Catch basin
	HP Hydro pole
	LS Light standard
	HYD Hydrant
	TL Traffic light
	Fence
	BS Bus Stop
	Tree

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 1 of 21

Stone Church Road West



LOCATION
MAP



Legend

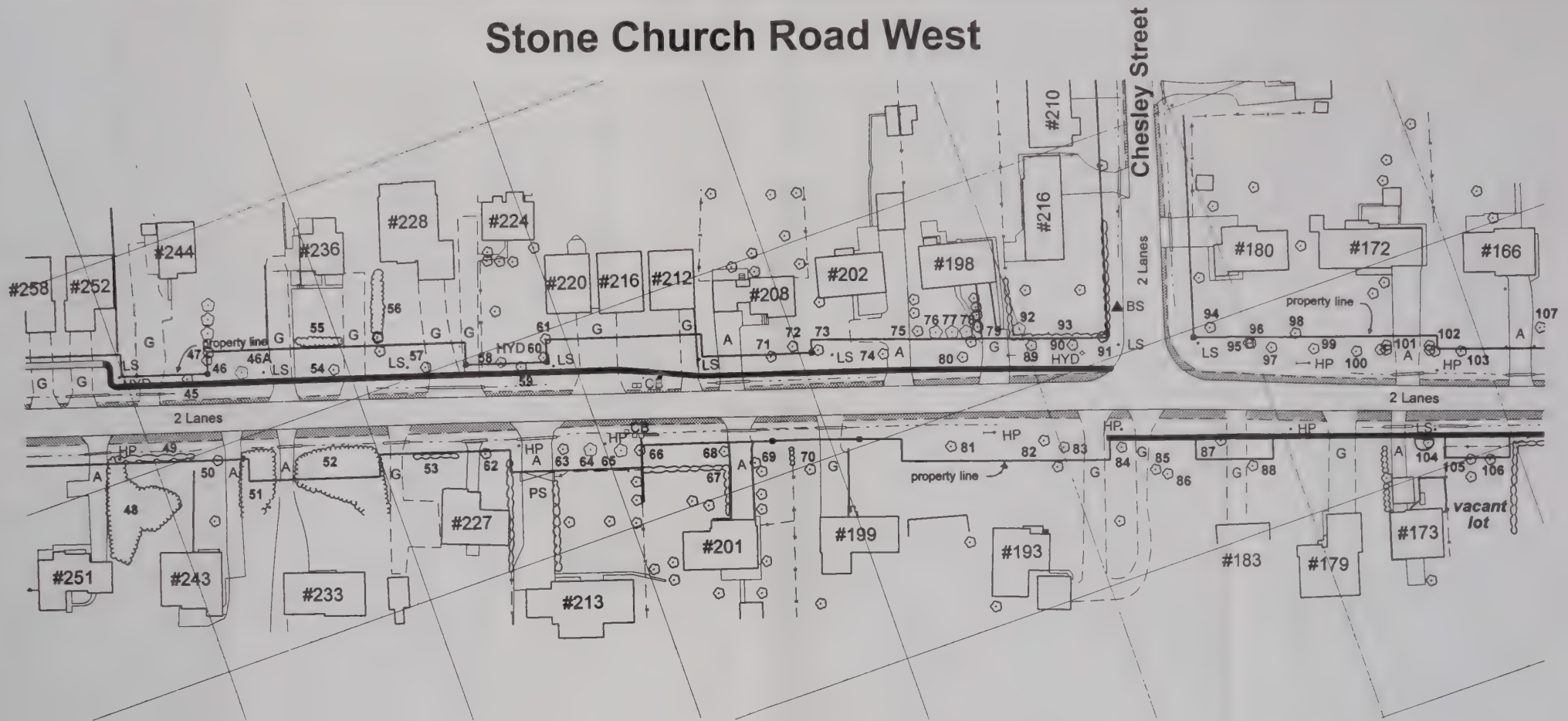
- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- Gravel shoulder
- Concrete sidewalk
- Asphalt path
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- HYD Hydrant
- - - Fence
- 33 Tree
- 23 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 2 of 21

Stone Church Road West



LOCATION
MAP



Legend

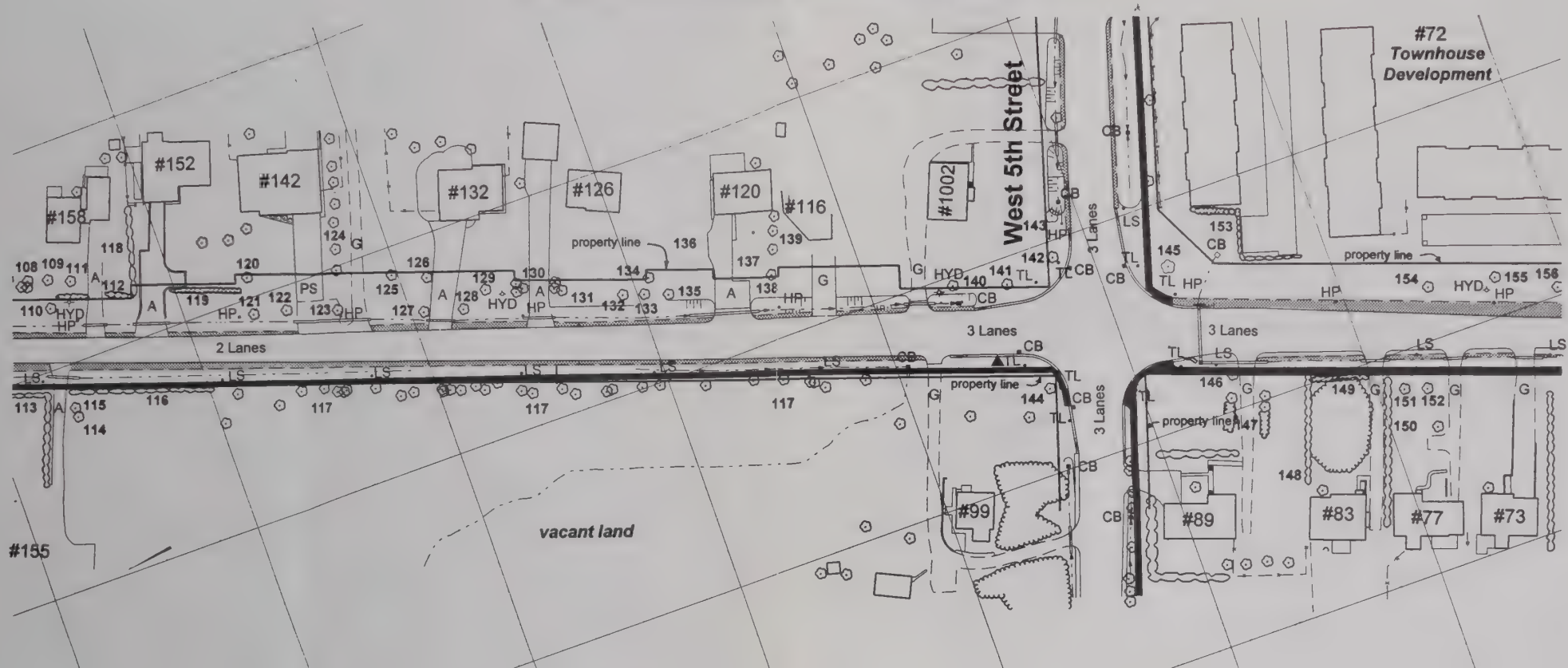
- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- PS Paving stone entrance or driveway
- Gravel shoulder
- Concrete sidewalk
- Asphalt path
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- ⊕ HYD Hydrant
- x — Fence
- ▲ BS Bus stop
- 54 Tree
- 67 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 3 of 21

Stone Church Road West



LOCATION
MAP

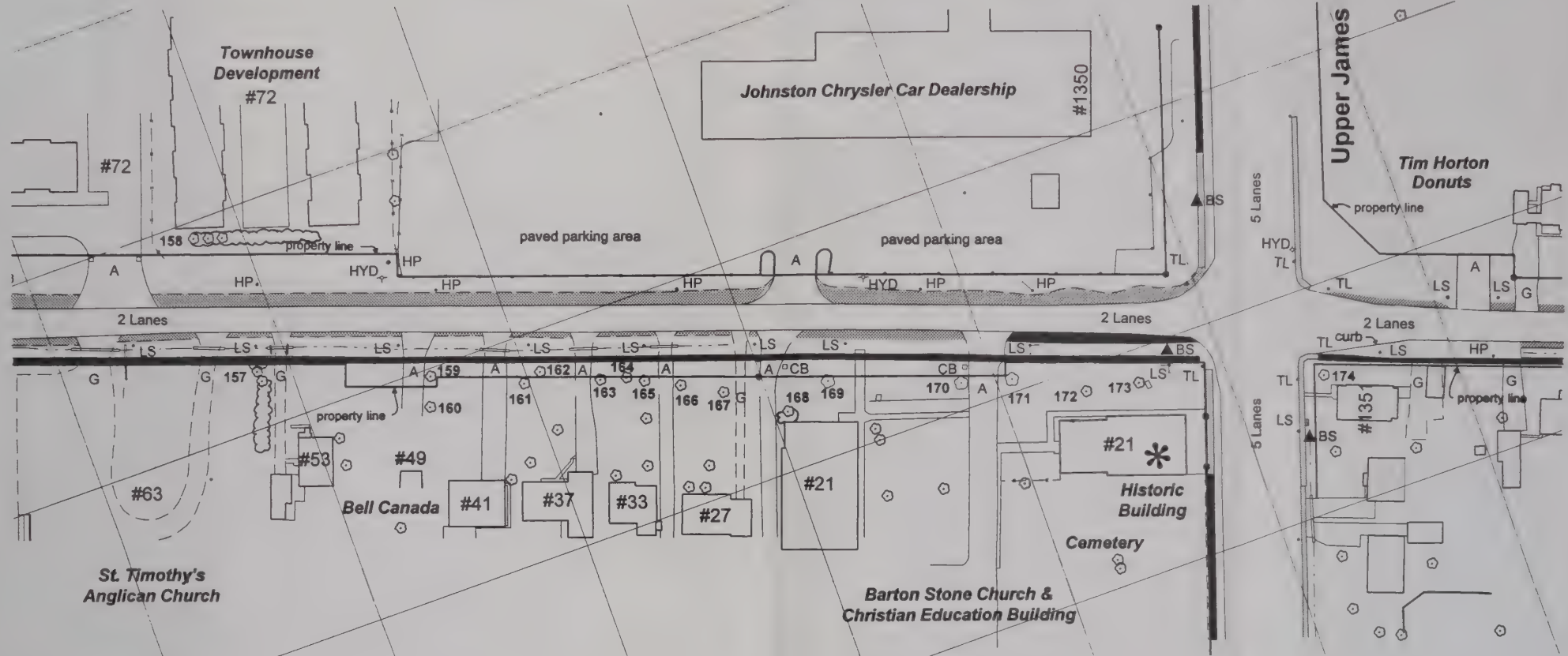


- Legend**
- A Asphalt entrance or driveway
 - G Gravel entrance or driveway
 - PS Paving stone entrance or driveway
 - Gravel shoulder
 - Asphalt path
 - Ditch & drainage course
 - CB Catch basin
 - HP Hydro pole
 - LS Light standard
 - △ HYD Hydrant
 - TL Traffic light
 - x - Fence
 - ▲ BS Bus stop
 - 120 Tree
 - 149 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road West



LOCATION
MAP

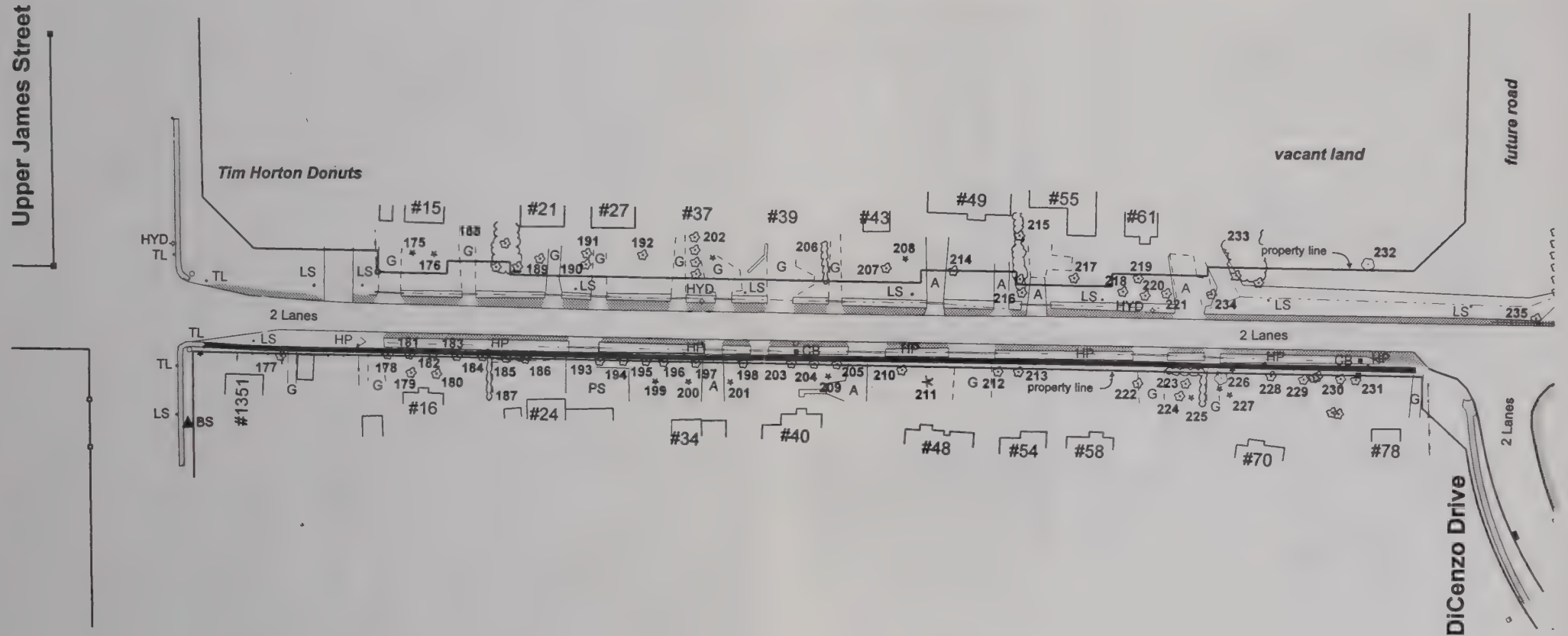


FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

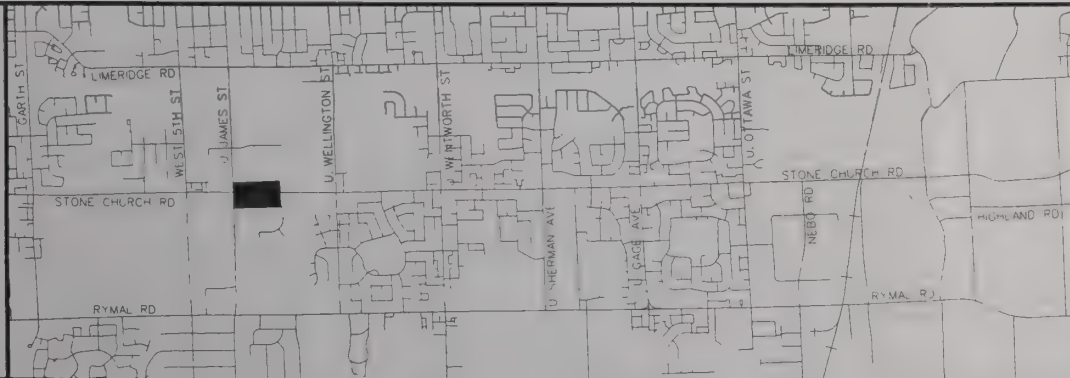
SCALE 1:1000

SHEET 5 of 21

Stone Church Road East



LOCATION
MAP



Legend

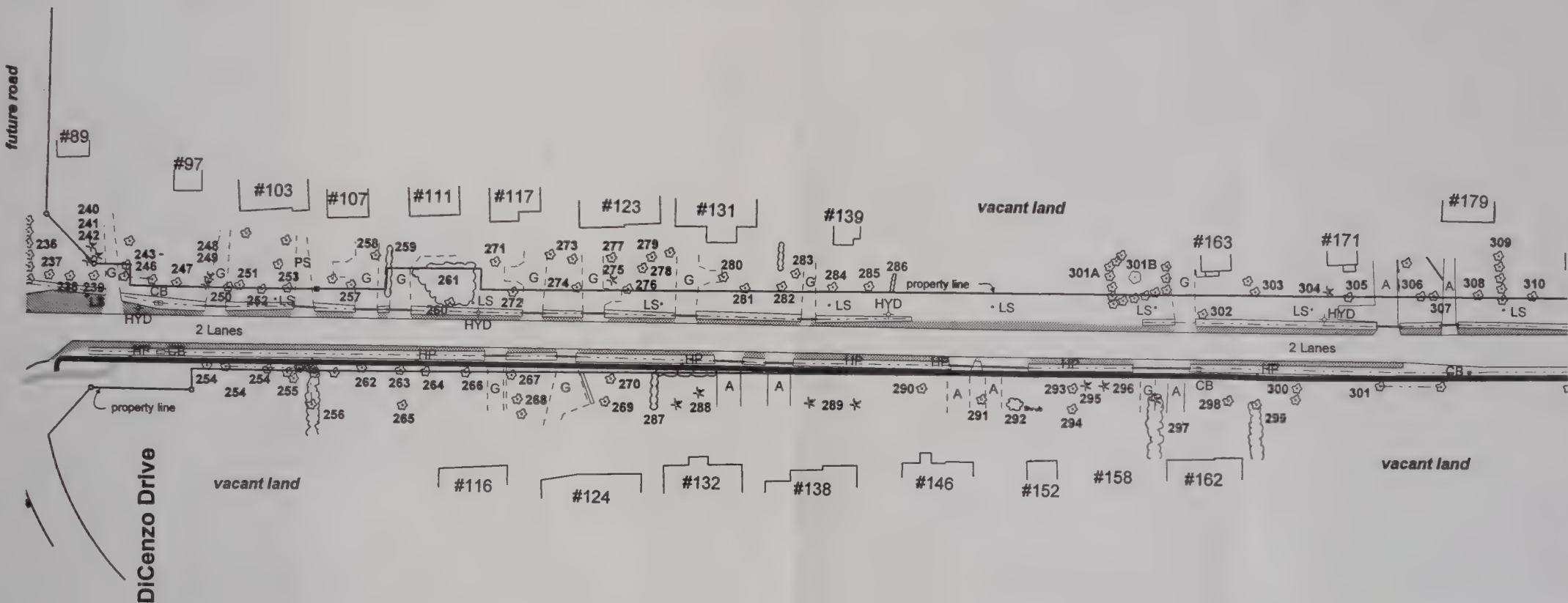
- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- PS Paving stone entrance or driveway
- Gravel shoulder
- Concrete sidewalk
- Asphalt path
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- ⚡ HYD Hydrant
- TL Traffic light
- ▲ BS Bus stop
- 192 Tree
- 206 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 6 of 21

Stone Church Road East



LOCATION MAP



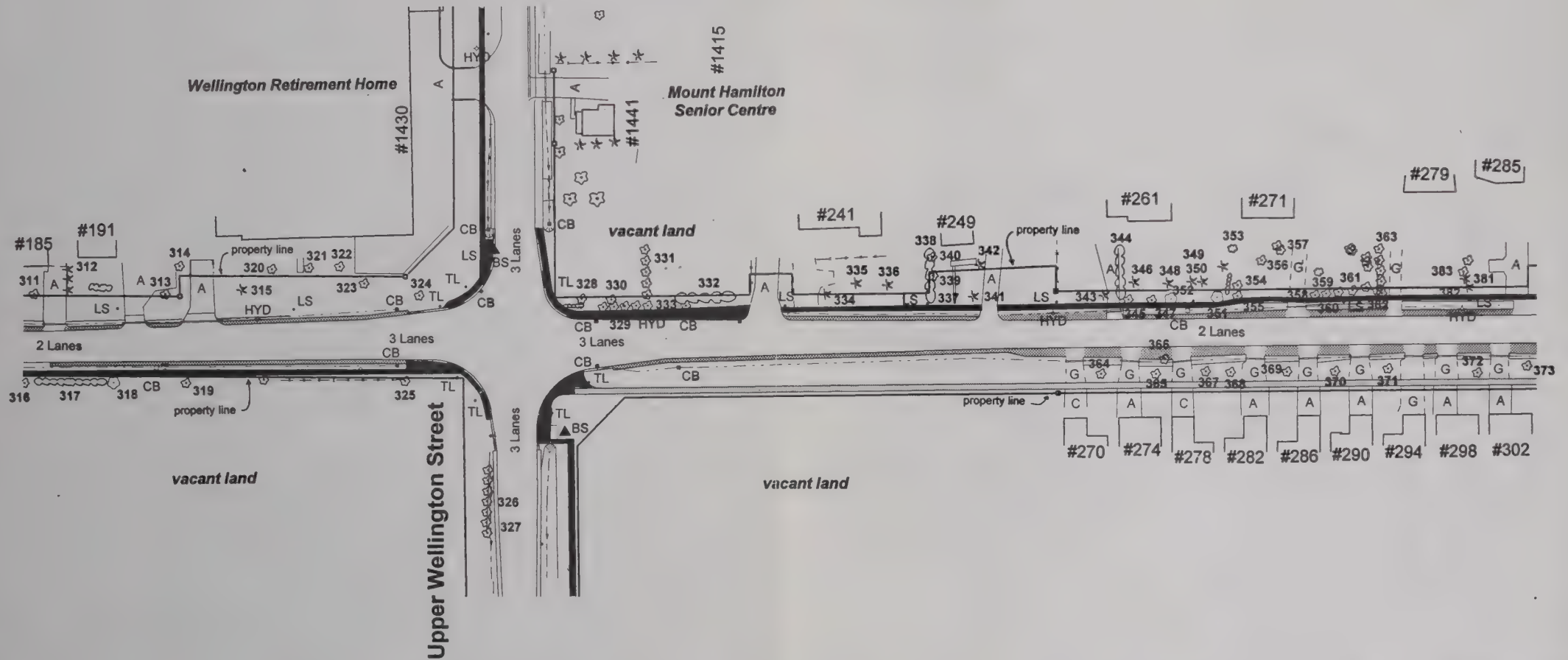
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- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- PS Paving stone entrance or driveway
- Gravel shoulder
- Concrete sidewalk
- Asphalt path
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- HYD Hydrant
- Tree
- Shrub, hedge, grove, row

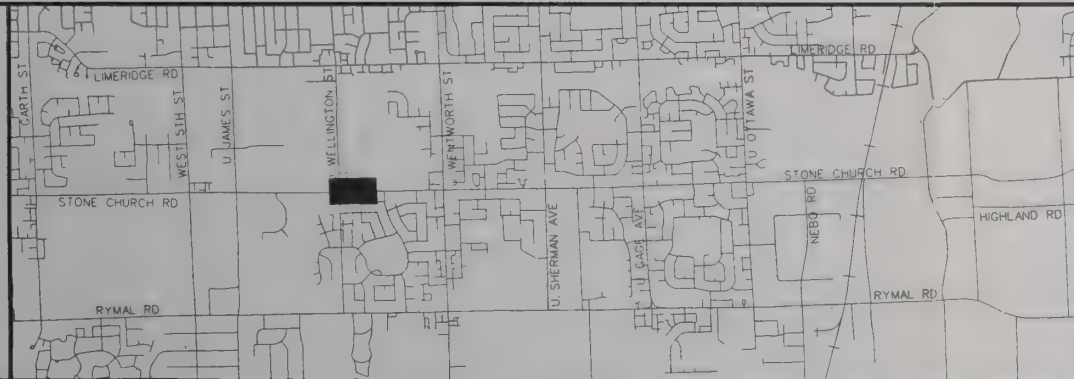
FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



Legend

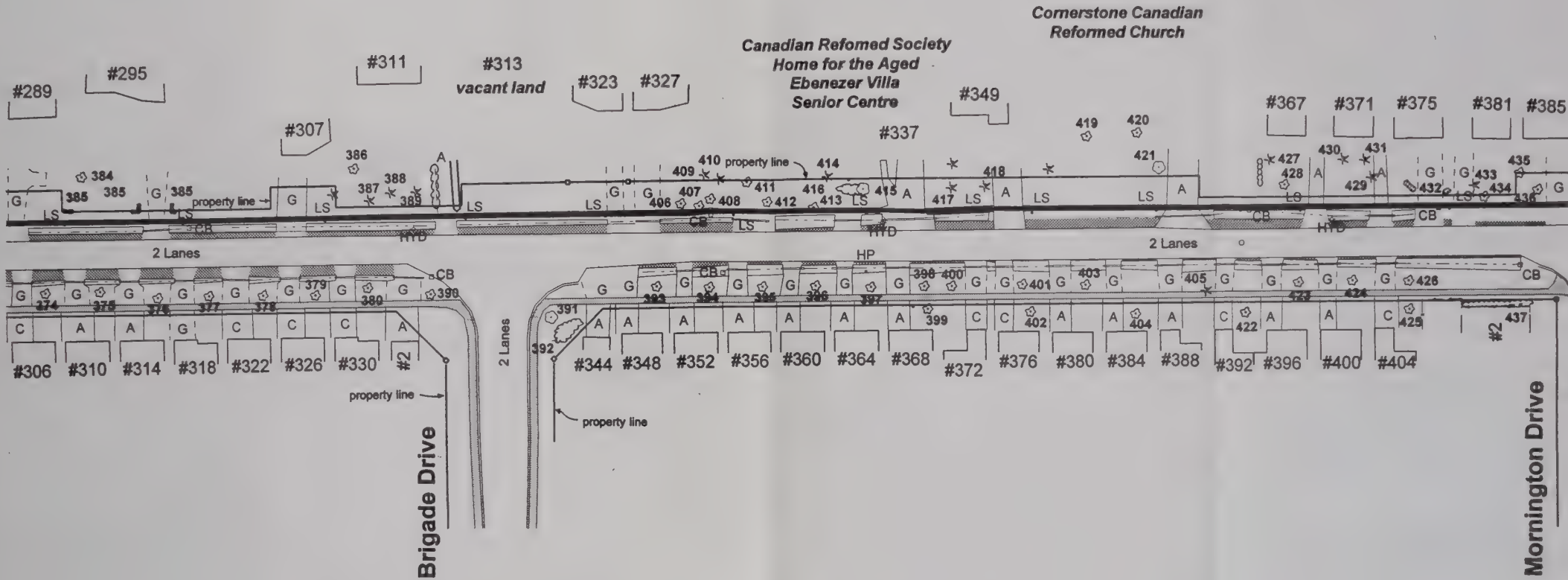
- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- C Concrete entrance or driveway
- Gravel shoulder
- Concrete sidewalk
- Asphalt path
- - - Ditch & drainage course
- CB Catch basin
- LS Light standard
- HYD Hydrant
- TL Traffic light
- x - Fence
- BS Bus stop
- 320 Tree
- 317 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

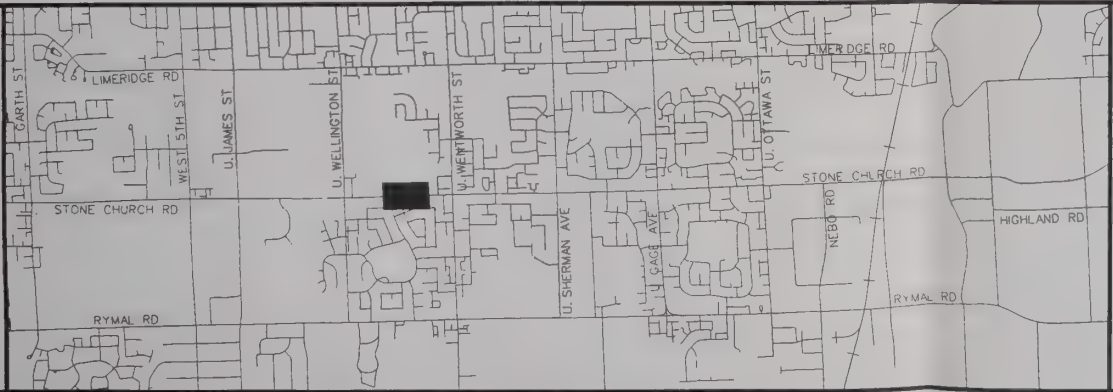
SCALE 1:1000

SHEET 8 of 21

Stone Church Road East



LOCATION
MAP

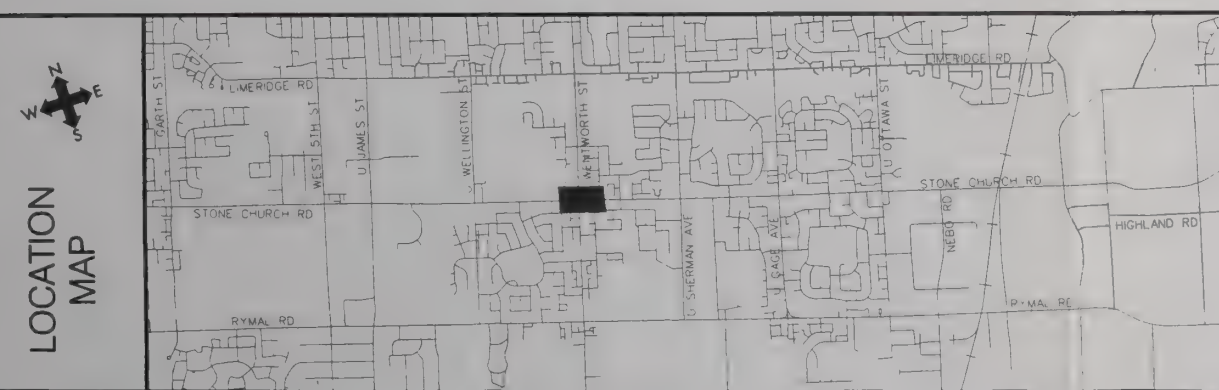
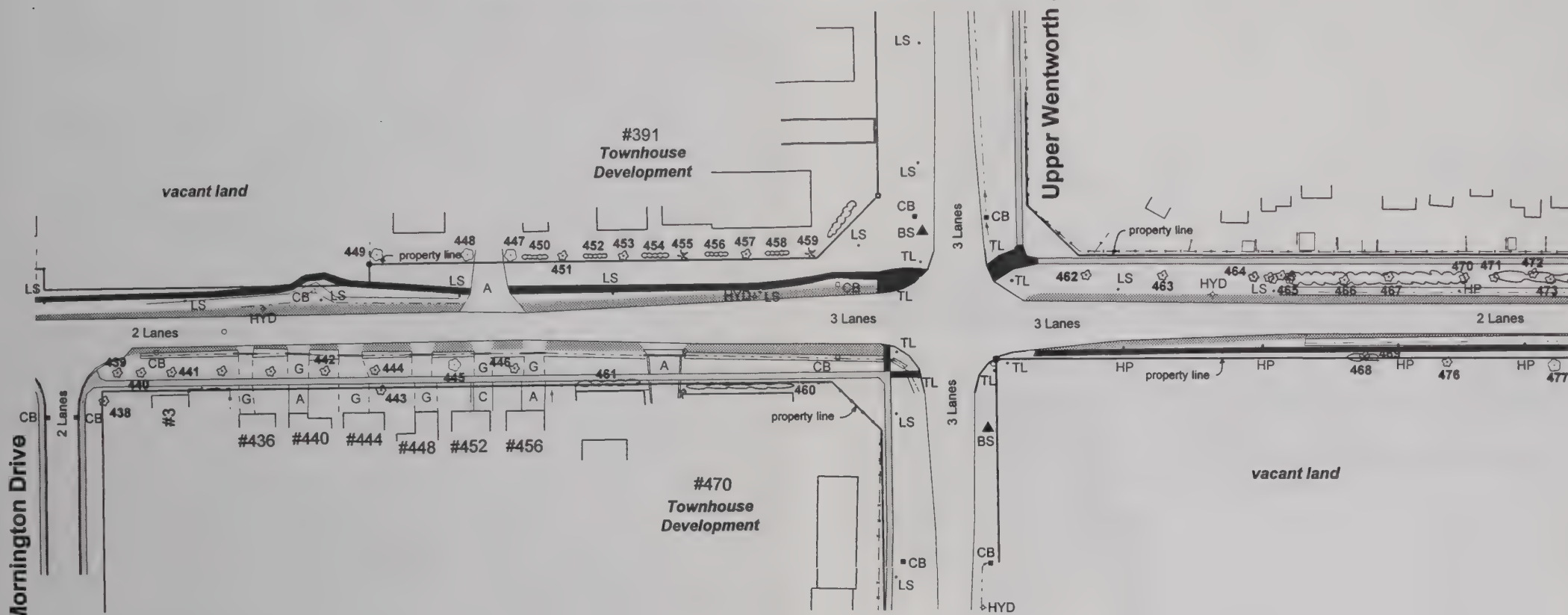


- Legend**
- A Asphalt entrance or driveway
 - G Gravel entrance or driveway
 - C Concrete entrance or driveway
 - Gravel shoulder
 - Concrete sidewalk
 - Asphalt path
 - Ditch & drainage course
 - CB Catch basin
 - HP Hydro pole
 - LS Light standard
 - HYD Hydrant
 - 384 Tree
 - 392 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



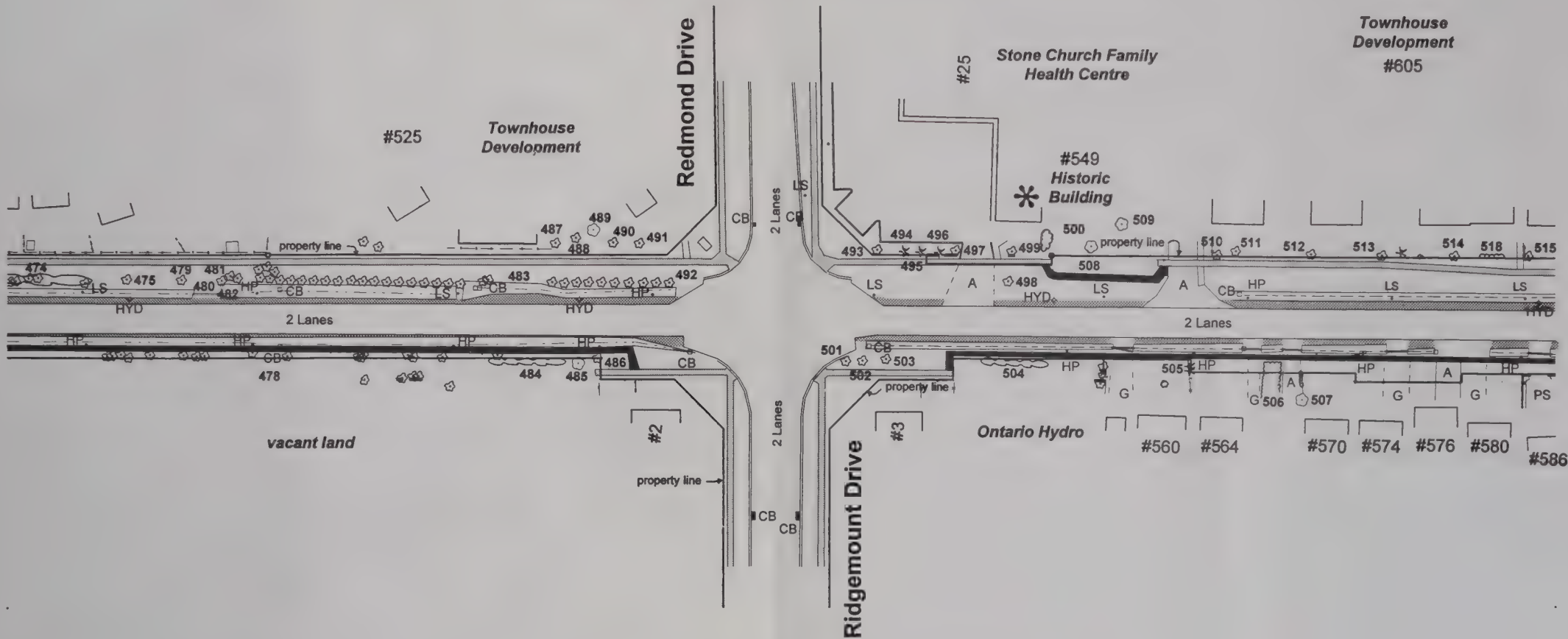
- Legend**
- A Asphalt entrance or driveway
 - G Gravel entrance or driveway
 - C Concrete entrance or driveway
 - Gravel shoulder
 - Concrete sidewalk
 - Asphalt path
 - Ditch & drainage course
 - CB Catch basin
 - HP Hydro pole
 - LS Light standard
 - HYD Hydrant
 - TL Traffic light
 - ▲ BS Bus stop
 - 444 Tree
 - 460 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 10 of 21

Stone Church Road East



LOCATION
MAP

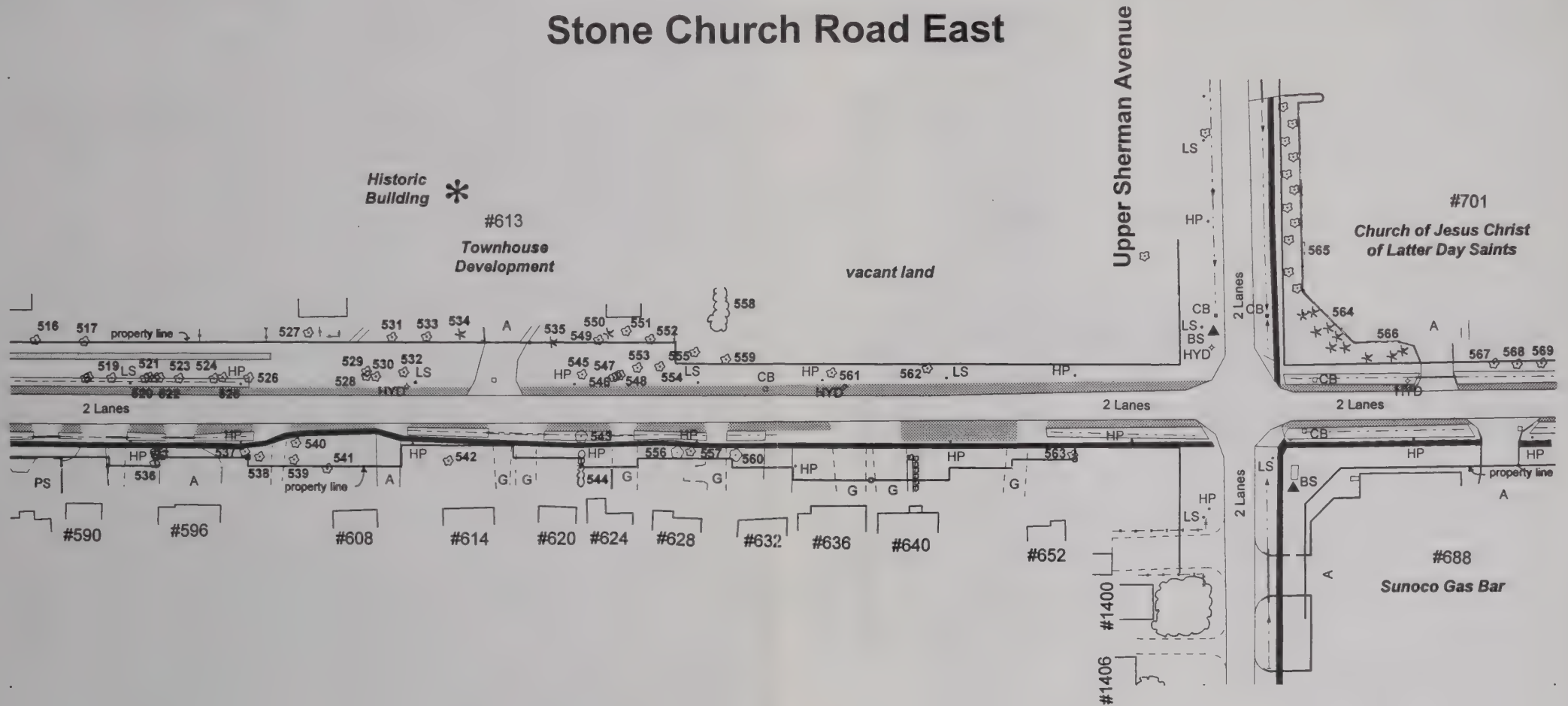


- Legend**
- A Asphalt entrance or driveway
 - G Gravel entrance or driveway
 - PS Paving stone entrance or driveway
 - * Historic building
 - Gravel shoulder
 - Concrete sidewalk
 - Asphalt path
 - Ditch & drainage course
 - CB Catch basin
 - HP Hydro pole
 - LS Light standard
 - HYD Hydrant
 - x Fence
 - 491 Tree
 - 484 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION
MAP

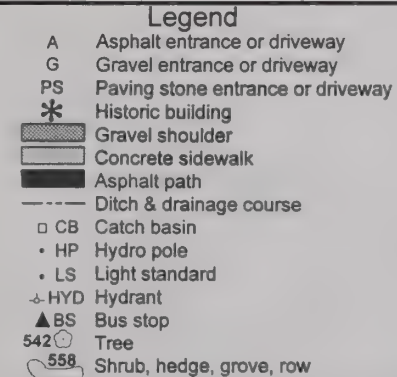
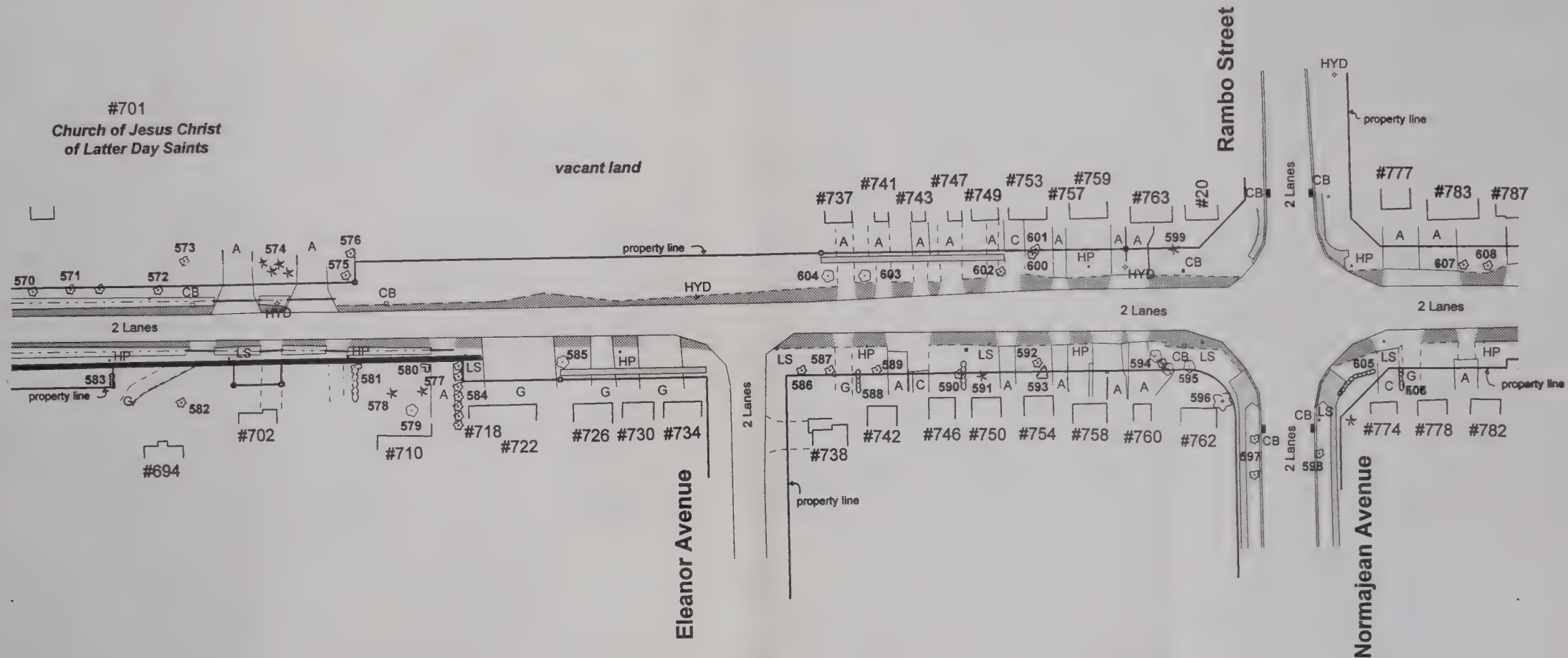


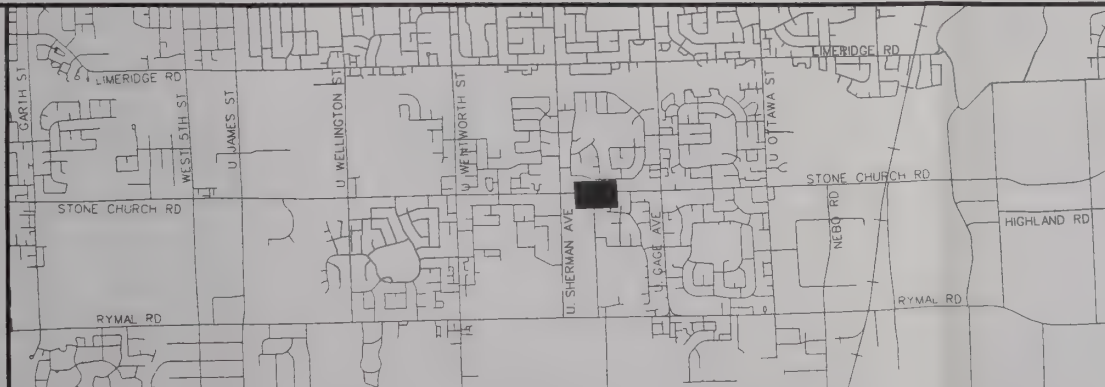
FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION MAP



Legend

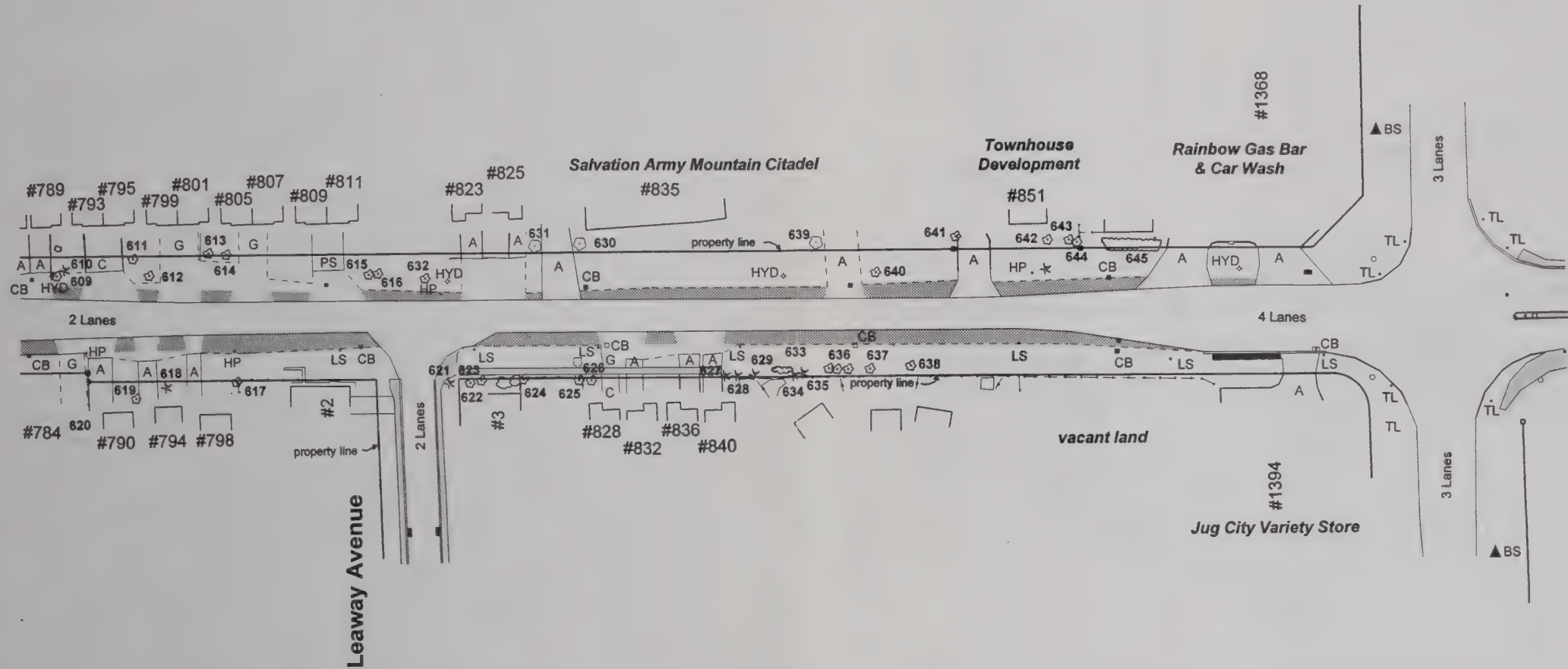
- | | |
|---|-------------------------------|
| A | Asphalt entrance or driveway |
| G | Gravel entrance or driveway |
| C | Concrete entrance or driveway |
|  | Gravel shoulder |
|  | Concrete sidewalk |
|  | Asphalt path |
| --- | Ditch & drainage course |
| □ CB | Catch basin |
| • HP | Hydro pole |
| • LS | Light standard |
| ↳ HYD | Hydrant |
| 586  | Tree |
| 588  | Shrub, hedge, grove, row |

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

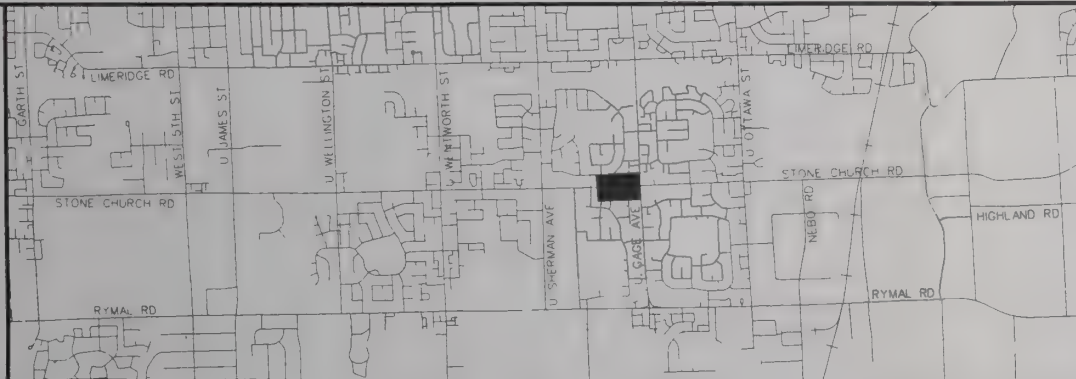
SCALE 1:1000

SHEET 13 of 21

Stone Church Road East



LOCATION
MAP



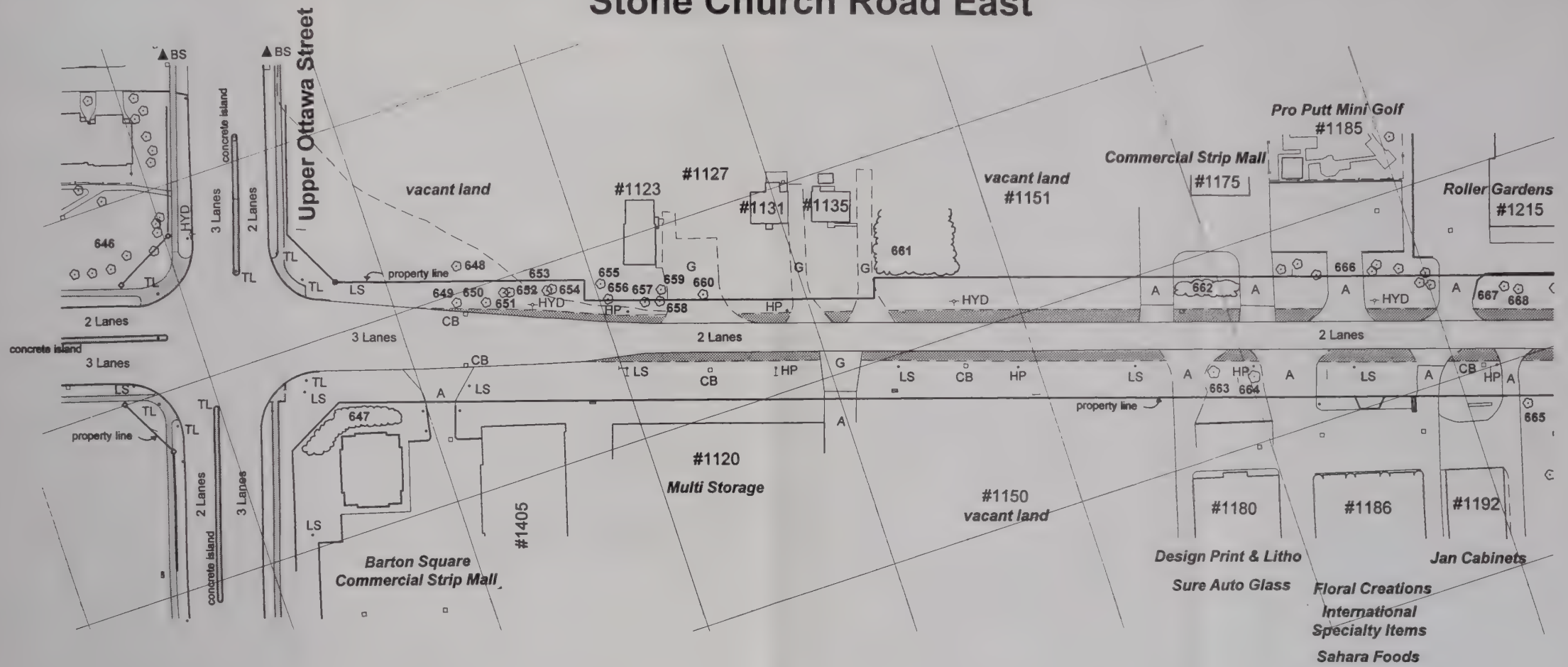
Legend

- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- PS Paving stone entrance or driveway
- C Concrete entrance or driveway
- Gravel shoulder
- Concrete sidewalk & traffic island
- Asphalt path
- CB Catch basin
- HP Hydro pole
- LS Light standard
- HYD Hydrant
- TL Traffic light
- BS Bus stop
- 612 Tree
- 633 Shrub, hedge, grove, row

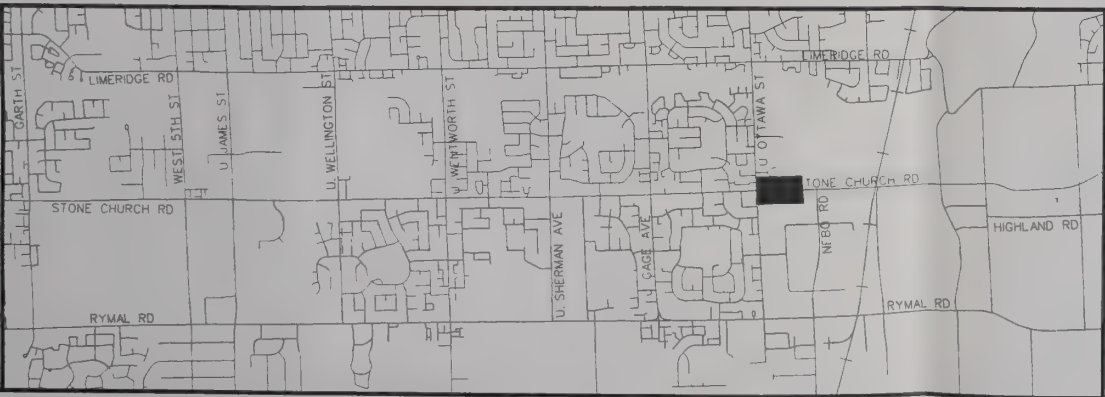
FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION MAP



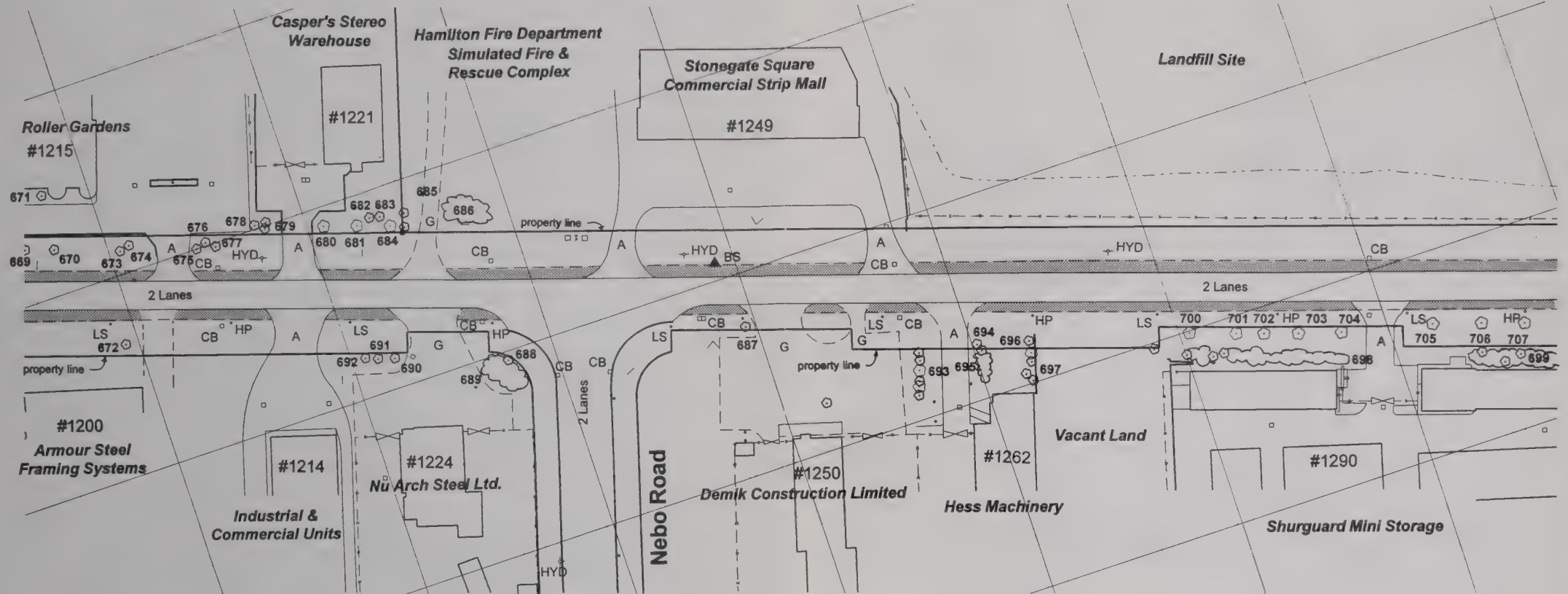
Legend

- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- Gravel shoulder
- Concrete sidewalk & traffic island
- Asphalt path
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- HYD Hydrant
- TL Traffic light
- BS Bus stop
- Tree
- Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



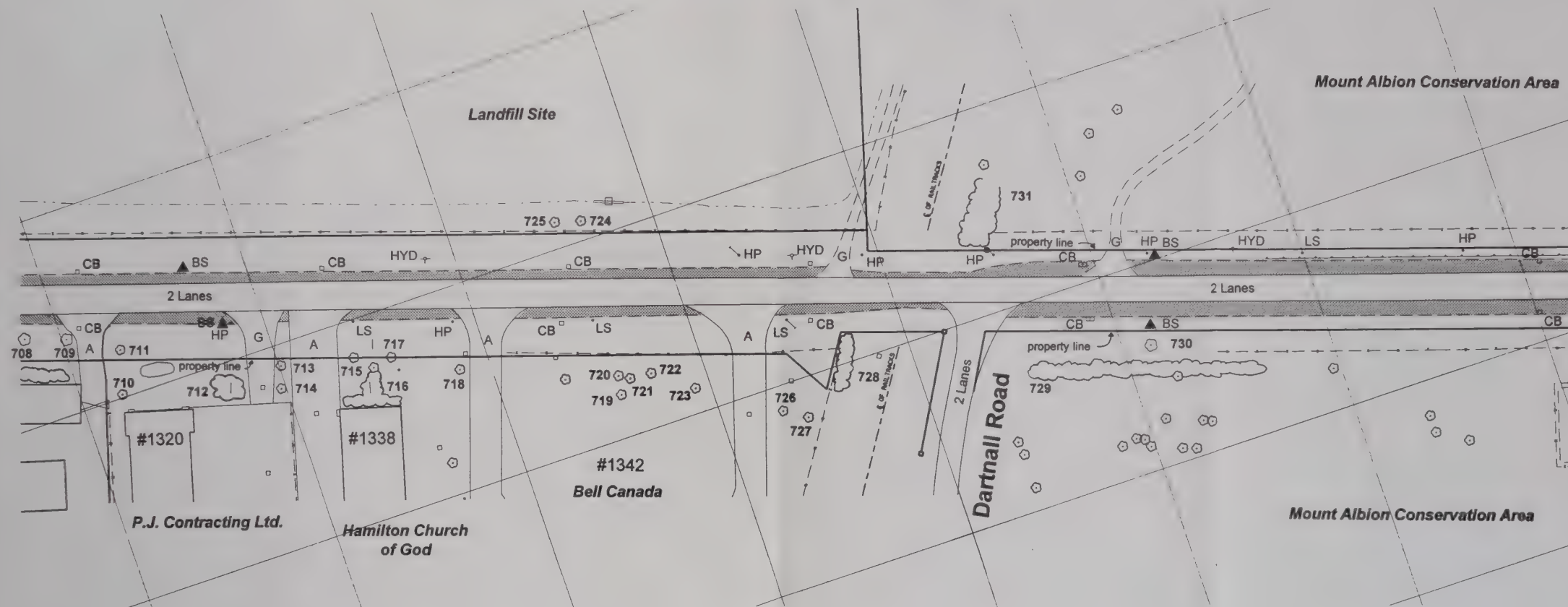
Legend

- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- Gravel shoulder
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- ◇ HYD Hydrant
- x - Fence
- ▲ BS Bus stop
- 672 Tree
- 686 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



Legend

- A Asphalt entrance or driveway
- G Gravel entrance or driveway
- Gravel shoulder
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- ⊕ HYD Hydrant
- x - Fence
- ▲ BS Bus stop
- 711 Tree
- 712 Shrub, hedge, grove, row

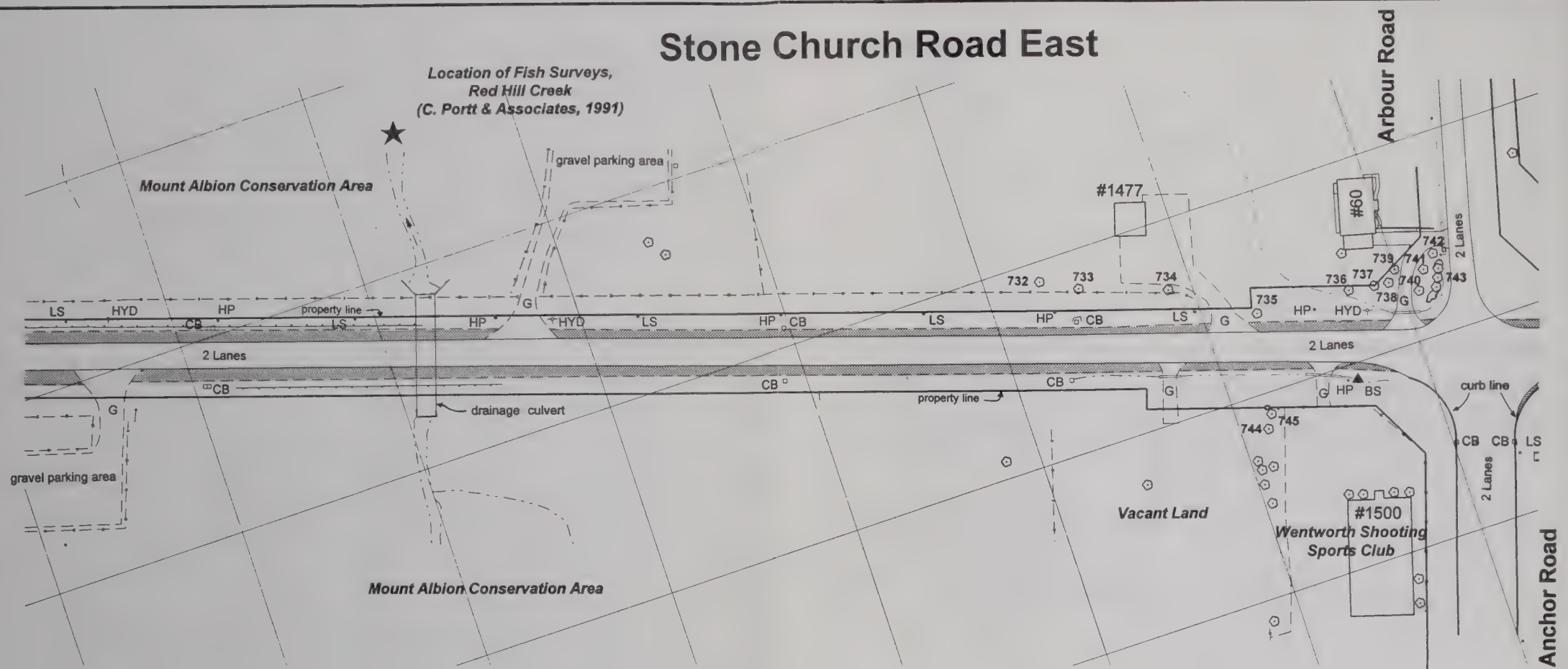
FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 17 of 21

Stone Church Road East

Location of Fish Surveys,
Red Hill Creek
(C. Portt & Associates, 1991)



LOCATION
MAP



Legend

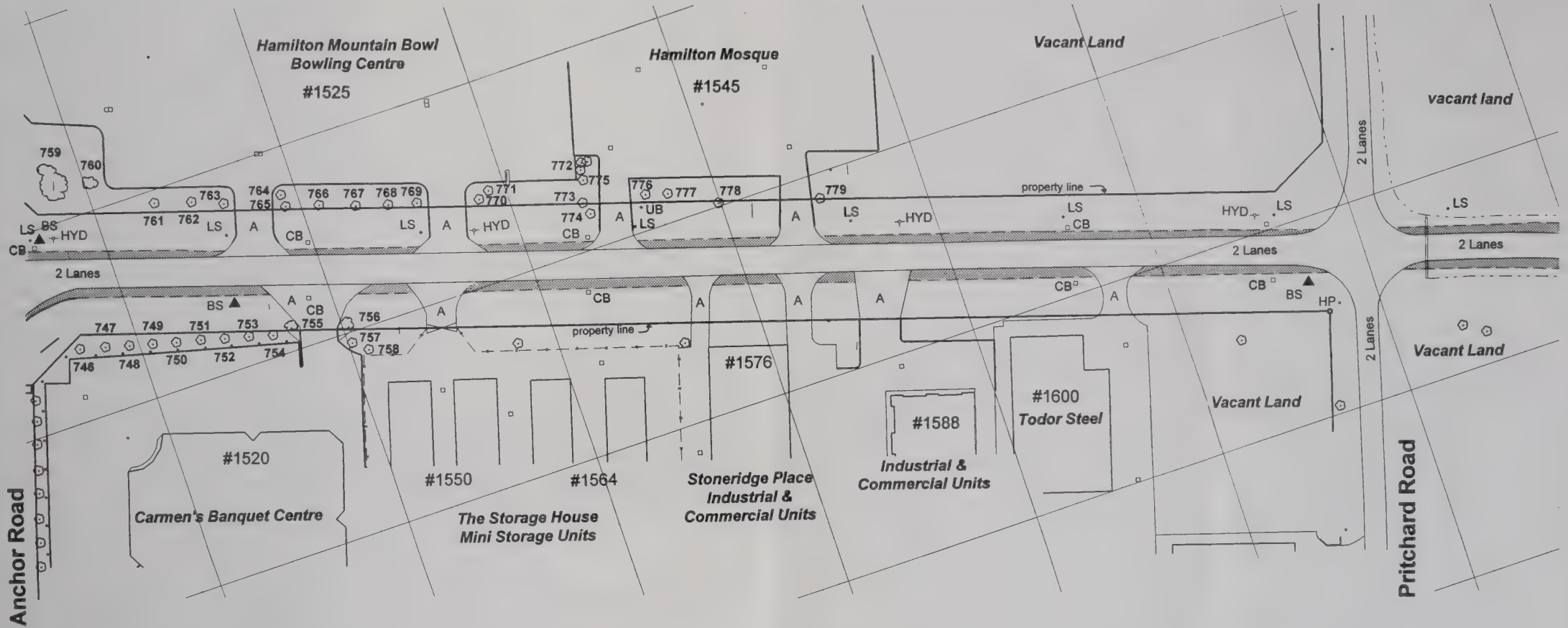
- ★ Fish Survey location
- G Gravel entrance or driveway
- Gravel shoulder
- Ditch & drainage course
- CB Catch basin
- HP Hydro pole
- LS Light standard
- ⊕ HYD Hydrant
- x - Fence
- ▲ BS Bus stop
- 732 ○ Tree
- 743 Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 18 of 21

Stone Church Road East



LOCATION
MAP



- Legend**
- A Asphalt entrance or driveway
 - Gravel shoulder
 - Ditch & drainage course
 - CB Catch basin
 - HP Hydro pole
 - LS Light standard
 - HYD Hydrant
 - Fence
 - BS Bus stop
 - Tree
 - Shrub, hedge, grove, row

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



Legend

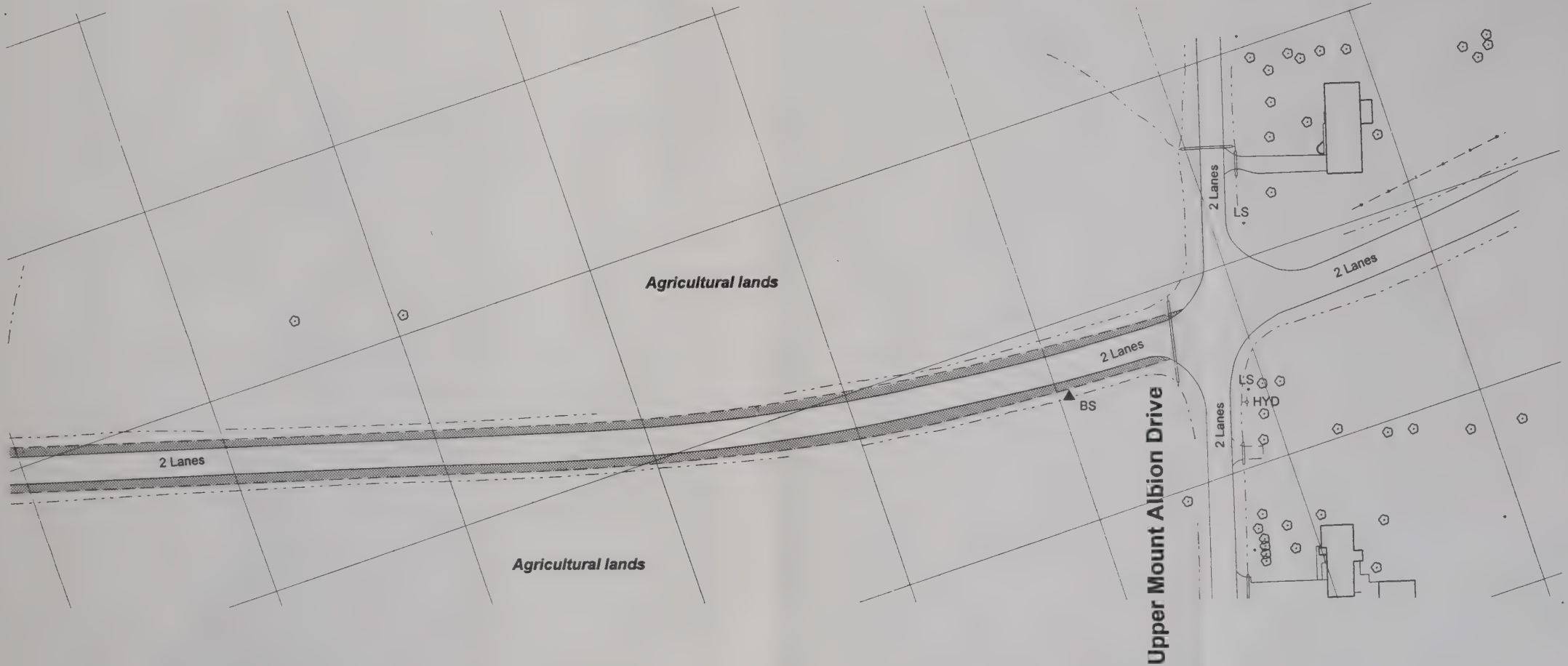
- G Gravel entrance or driveway
- Gravel shoulder
- - - Ditch & drainage course
- LS Light standard

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

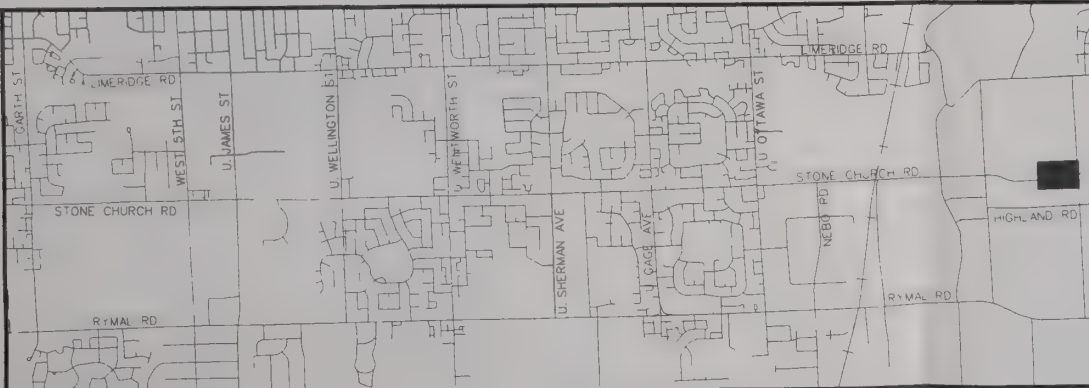
SCALE 1:1000

SHEET 20 of 21

Stone Church Road East



LOCATION
MAP



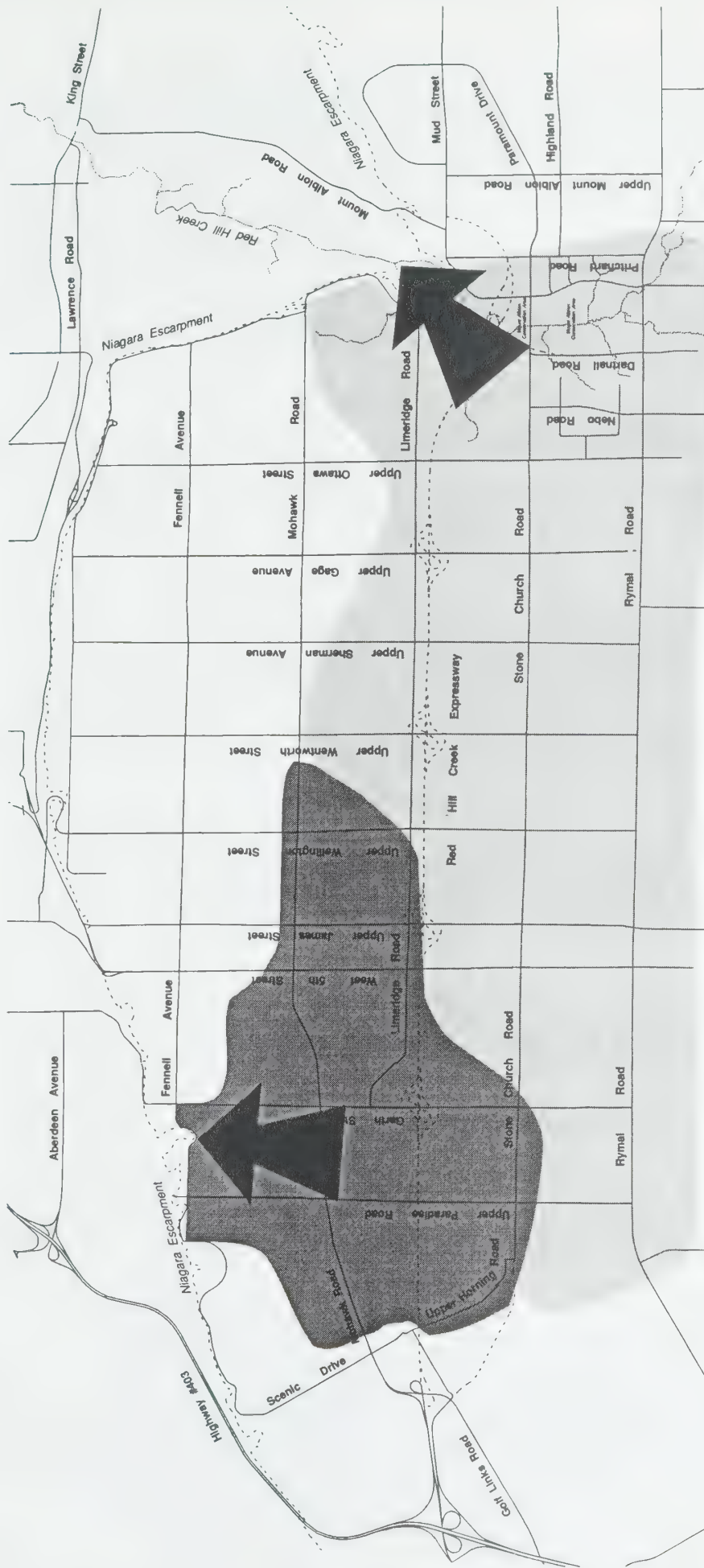
Legend

-  Gravel shoulder
-  Ditch & drainage course
-  LS Light standard
-  HYD Hydrant
-  x Fence
-  BS Bus stop

FIGURE 4
STONE CHURCH ROAD
EXISTING CONDITIONS

SCALE 1:1000

SHEET 21 of 21



CATCHMENT AREA DRAINS TO
WEST MOUNTAIN AREA TRIBUTARY
THEN TO FENNELL AVENUE TRUNK

CATCHMENT AREA DRAINS
TO RED HILL CREEK



FIGURE 5

CATCHMENT AREAS
FOR DRAINAGE



The storm water system associated with the road is described in Section 3.4. The section of the road between Upper Ottawa Street and Upper Gage Avenue has been upgraded to an urban section with storm sewers and there are no natural flows in this area.

Considerations:

- The Red Hill Creek, in the Mount Albion Conservation Area, tributary flowing across Stone Church Road is a significant surface water flow to the main body of that creek. Stormwater entering the creek has the potential to influence the quality and quantity of flows in the creek.

3.2.3 Groundwater

Information on groundwater in the Mount Albion Conservation Area has been obtained through the design work for the Red Hill Creek Expressway. In addition, the groundwater in the area has been collected and analyzed and documented in the report "Upper Ottawa Landfill Site Final Report, 1986" (Ontario Ministry of Health). According to that report, groundwater flows to the east and south and there are no records of existing wells along the road in the area.

Limited information on groundwater along the remainder of Stone Church Road is available from boreholes completed for previous sewer and watermain projects along Stone Church Road. Most of the boreholes for these projects extended to 5.0 m or 6.0 m below existing grade. However, given the short duration that the boreholes were open and the relatively impermeable soils in the area, recorded water levels can not be considered stable. Therefore, accurate groundwater elevations can not be determined with this information.

Considerations:

- Groundwater flows from the landfill site should not affect any work on the road.
- Groundwater is not expected to be encountered during construction.

3.2.4 Vegetation

Most of the vegetation directly adjacent to the road is reflective of the residential/commercial urban environment. In 1992, an arbourist identified and assessed 520 trees along the road within a 100 foot wide corridor and using the centre line of the road as a guide. The arbourist identified the type of tree, its size and general health and indicated if the trees should be given any special consideration based on these factors.

The survey (Appendix A) concluded that the overall health of the trees was considered to be satisfactory; 424 trees are healthy, 96 trees are in weak or poor condition. It identified 52 trees that should be given special consideration due to a combination of size, health and type of tree. Since the tree inventory has been completed, two major ice storms have severely damaged trees in the area. Some of these trees may have been removed as a result of the damage. In addition, new developments that have received municipal approval will result in the removal of some of these trees. This inventory was used as the basis for assessing overall impacts of alternative road designs. An update of the inventory was carried out as part of the detailed design work and landscaping plan, and is included in Appendix A. Figure 4 shows the location, and Appendix A identifies species of trees within the road right-of-way, according to the Landplan Collaborative Inventory, 1994/95.

The section of the Mount Albion Conservation Area adjacent to the road consists primarily of herbaceous or non-woody plants. The entire area was assessed by the Natural Areas Inventory Project. Correspondence with the Hamilton Region Conservation Authority indicates that no rare or endangered species have been recorded within the road right-of-way. Additional work carried out for the detail design of the Dartnall Road interchange (Red Hill Creek Expressway project) did not find any significant species within the road right-of-way.

The public indicated at information centres and through correspondence that the need to retain trees along Stone Church Road is important. Also, property owners along the road identified landscaping and trees considered important to them. These trees have been incorporated into the landscaping plan.

Significant Features:

- Trees identified by arbourist.
- Landscaping and trees identified by property owners and other residents in area.

3.2.5 Fish and Wildlife

Two fish surveys of the Red Hill Creek above the Escarpment found only one species of fish, Brook Stickleback, in this section of the creek on the Mountain (C. Portt and Associates, 1991; Natural Areas Inventory Study, 1991), shown on Figure 4, Sheet 18. This species is commonly found in this type of warm water stream. An earlier study (Holmes, 1984) identified 4 species of fish in this stream, but this finding has not been confirmed in subsequent sampling.

The Natural Areas Inventory Study did not report any rare or endangered mammals in the Mount Albion Conservation Area. Although there are significant species of butterflies, and possible breeding habitat for two species of rare Carolinian Wrens in the Red Hill Valley Environmentally Significant Area, habitat for these species does not appear to be located within or adjacent to the road right-of-way (B. Duncan, Hamilton Region Conservation Authority; personal communication).

Large mammals, such as White-tailed Deer, frequently use creeks as a corridor for moving to and from feeding, wintering and breeding areas. The Red Hill Creek Valley has a history of deer sightings and therefore can be expected to act as a corridor for deer. The remainder of the study area is urban and can be expected to support typical urban wildlife.

Significant Habitat Features:

- The Red Hill Creek supports fish and therefore permits are required from the Ministry of Natural Resources for any changes to the stream that may affect fish habitat.
- Deer and other mammals may be expected to continue to follow the Red Hill Creek and cross Stone Church Road in the future.

3.2.6 Bedrock and Surficial Geology

Bedrock

Boreholes drilled along Stone Church Road for watermain and sewer projects indicate that the bedrock depth varies between 1.2 m and over 6.0 m. In general the elevation of the bedrock decreases from west to east.

Considerations:

- Bedrock will be encountered in some areas during sewer construction.

Soils

The soils of this area, as determined by soil sampling completed for sewer and watermain projects along Stone Church Road, are clays and silts with some local fill. In general, the soils are stiff to hard and the overburden ranges in depth from 1.2 m to over 6.0 m.

Significant Features:

Water percolates through clays and silts very slowly. Therefore, storm water collects in ditches where they exist, and very slowly, infiltrates through the soil to the groundwater table. In general, silts are not a very stable material in an open cut. Excavations in silt that are near the water table may require special consideration during construction to control erosion and sedimentation.

3.3 Cultural Environment**3.3.1 Heritage Resources**

The Local Architectural Conservation Advisory Committee (LACAC) have identified three buildings as being historically significant. Two stone houses (c.1850) have been incorporated into new developments; #549 Stone Church Road East is part of a commercial development (Figure 4, Sheet #11); # 613 Stone Church Road East is part of a residential building (Figure 4, Sheet #12). Both buildings are outside the road right of way.

The Barton Stone United Church is located at the southwest corner of Stone Church Road and Upper James Street (Figure 4, Sheet #5). The church's cemetery is located south of the church on Upper James Street. The church and the cemetery are in the process of being designated as a historical building/feature under the Ontario Heritage Act.

Significant Heritage Features:

Barton Stone United Church and associated cemetery properties are directly adjacent to the road right-of-way. They are significant heritage features that require special consideration during the evaluation of alternatives, and mitigation of impacts.

3.4 Socioeconomic Features

The Regional Official Plan, the City of Hamilton Official Plan and the City of Stoney Creek Official Plan outline the proposed land uses within the study area. In addition Neighbourhood Plans in the City of Hamilton add a further level of detail to the designation of land uses and also indicate the future land uses. There are 16 neighbourhoods within the study area. In addition, the Mount Albion Conservation Area is within the Niagara Escarpment Protection Area (see Section 3.2.1).

Stone Church Road exhibits a wide range of land uses including urban residential, urban commercial, industrial/commercial and agricultural. The following sections describe these features and their significance in the development of this road project.

3.4.1. Existing and Proposed Land Uses

Stone Church Road exhibits three general land use types: residential, industrial/commercial, and agricultural. Figure 6 shows the existing and proposed land uses in the area.

Residential Development

The road is historically a rural two lane road with houses fronting onto the street. Typically, these older homes have wide frontages with large trees planted alongside the road. Over the past few years, a number of subdivisions have developed. Some have driveways directly onto Stone Church Road while others have "reverse frontage" and access is from a side street or mid block collector street. In addition, some of the older properties have been divided to create new lots and this has created additional driveways fronting onto the road.

In summary, the type of housing development has changed in some areas of the road from older, large lots with single family homes to new smaller lots with a mix of housing types (townhouses, single family). Overall, the section from Garth Street to Upper Ottawa Street is primarily residential in character with a mixture of housing types and frontages.

The proposed land use designations in the area are not expected to change the character since most of the neighbourhoods are designated with various forms of residential development. However, there is the potential for an increase in residential housing through development of vacant sites, redevelopment of larger pieces of property and severance of lots for residential infill.

Commercial/Industrial Development

Commercial development is located at some of the major intersections along the road and in the commercial/industrial business park in the east end. Some areas designated for commercial development at intersections are undeveloped.

In addition, the area east of Upper Ottawa Street is developing (and is designated) as a Business Park (excluding the Mount Albion Conservation Area). The Red Hill Creek Expressway will provide a connection to the Business Park and Dartnall Road.

Agricultural Land

East of Pritchard Road, the adjacent land uses are agricultural, however, the City of Hamilton Official Plan designation for the area between Pritchard Road and the City boundary is Light Industrial. The approved plans for the Red Hill Creek Expressway include an interchange on the north side of Stone Church Road in this area with an intersection at Stone Church Road. However, this plan is under review.

The City of Stoney Creek has designated the area between the City boundary and east of Upper Mount Albion Area as "Service Commercial", followed by medium and high density residential development, in the Official Plan and anticipates this as "Stage 1" of development in Stoney Creek. However, the Regional Official Plan indicates that this area's population cannot exceed 6500 until additional transportation capacity across the Niagara Escarpment (i.e. the Red Hill Creek Expressway) is established.

Considerations:

The land uses in the neighbourhoods adjacent to the road and the number of driveways associated with the road will affect the service function of the road. This has further implications for traffic operations such as left turning movements into driveways, type of traffic using the road, and expected volumes or numbers of vehicles using the road.

There are three distinctly different characteristics along the road: residential, commercial/industrial, and agricultural. Traffic characteristics in these sections will be different and solutions to the operational problems reflect those differences. The area between Pritchard Road and Upper Mount Albion Road is currently under review and no development will occur here until the status of the Red Hill Creek Expressway is resolved.

3.4.2 Institutional Features

There are a number of religious institutions located along Stone Church Road (see Figure 4 for locations):

- Barton Stone United Church (also a heritage feature) and associated Learning Centre (Sheet #5)
- St. Timothy's Anglican Church (Sheet #5)
- Cornerstone Canadian Reformed Church (Sheet #9)
- Church of Jesus Christ of Latter Day Saints and associated genealogical library serving the Niagara Peninsula Area (Sheet #12)
- Hamilton Church of God (Sheet #17)
- Kingdom Hall (Sheet #2)
- Salvation Army Mountain Citadel - constructed in 1992 (Sheet #14)

Many of these halls and churches draw their congregation from a wide geographic area and hold a variety of functions at these locations.

A number of public and separate schools and one private school are located in the neighbourhoods north and south of Stone Church Road. Most of the students are bussed to their schools, however, a large number of high school students cross Stone Church Road between Upper Sherman Avenue and Redmond/Ridgemount Drive to access St. Jean du Brebeuf Secondary School.

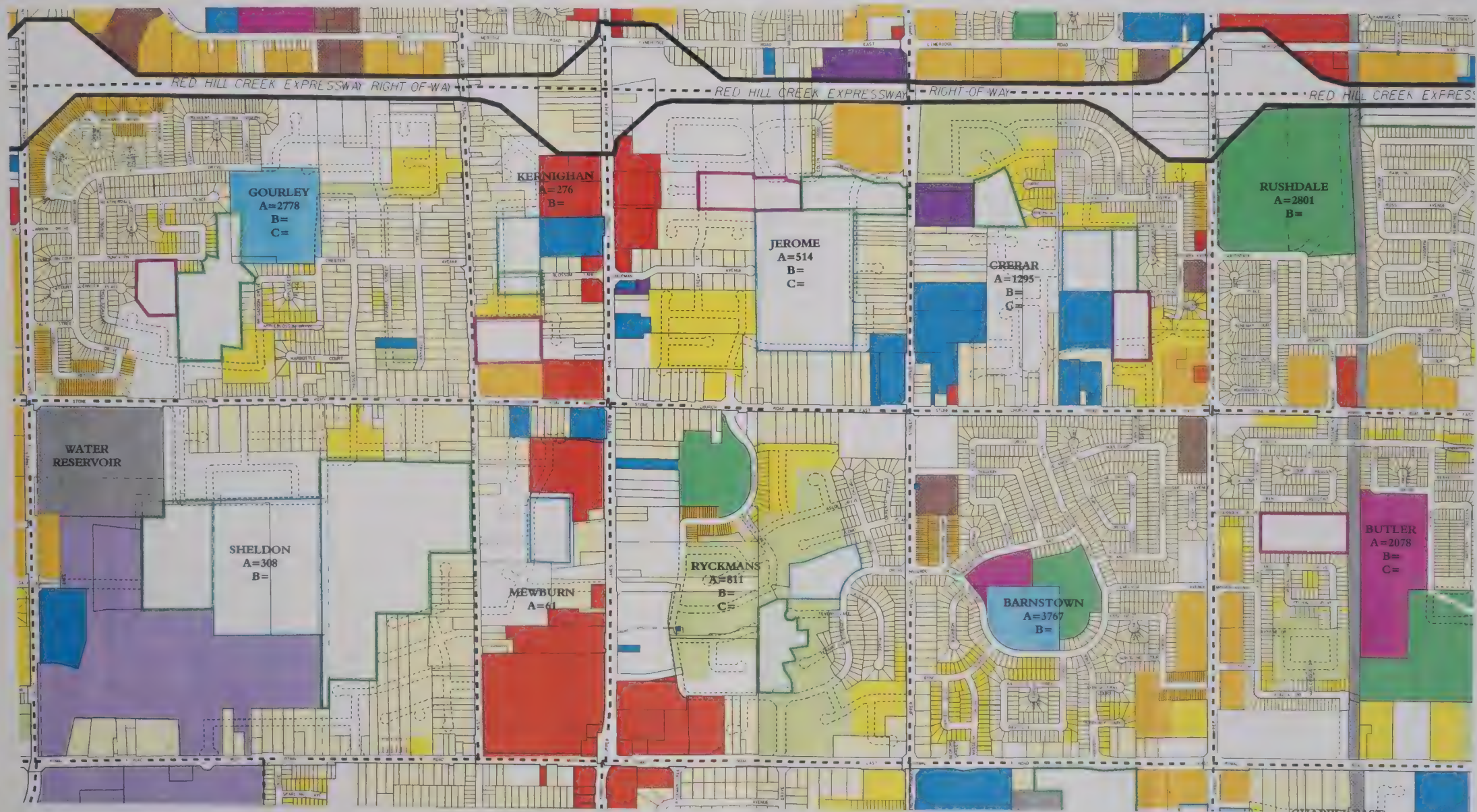
Considerations:

- a large number of students cross the road between Redmond/Ridgemount Drive and Upper Sherman Avenue to reach St. Jean du Brebeuf School at all times of the day; and,
- the religious institutions can be expected to generate both pedestrian and vehicular traffic at various times of the week.

3.4.3 Senior Citizen's Facilities

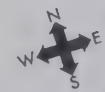
There are three senior citizen's facilities along the road (See Figure 4):

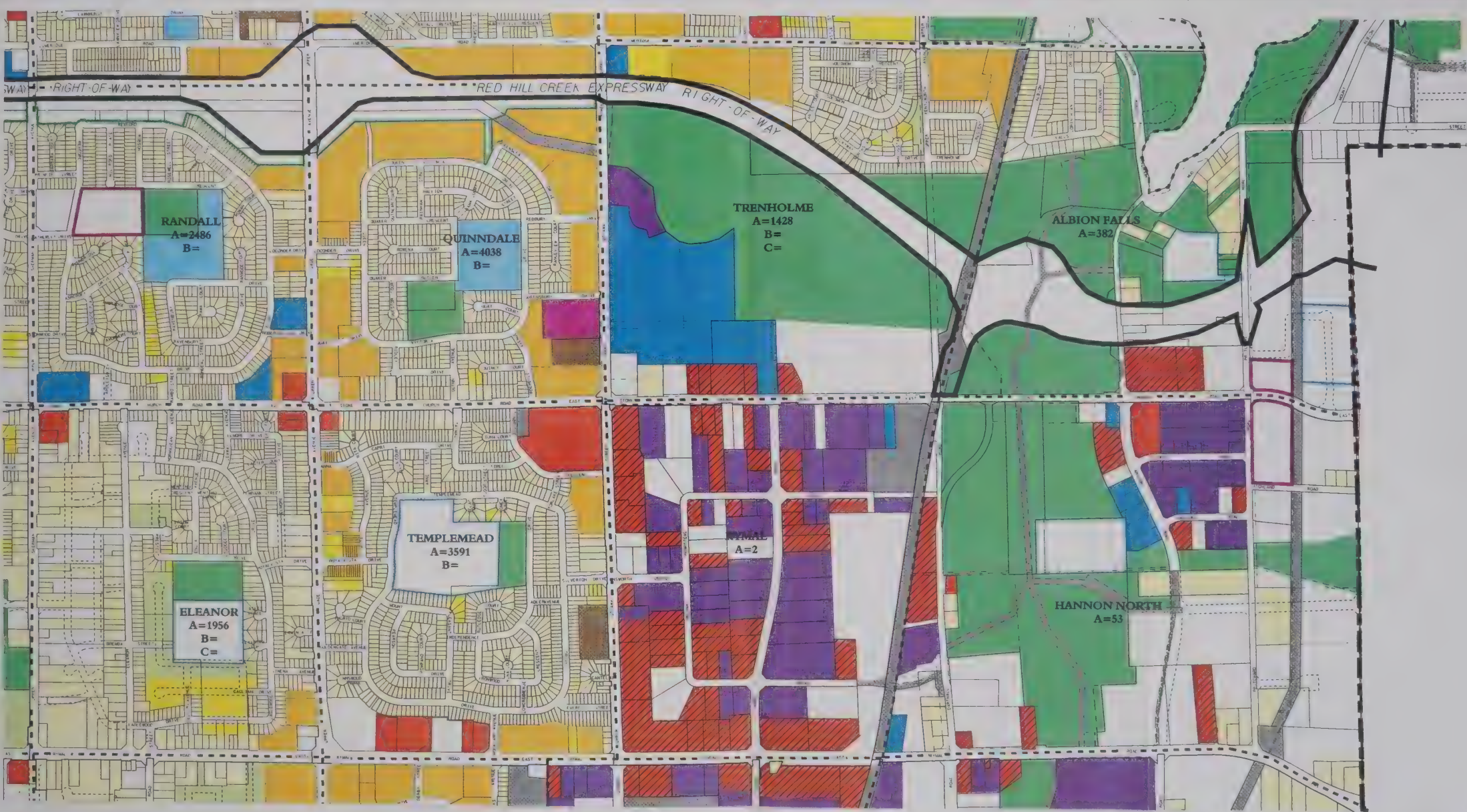
- Wellington Retirement Home at the northwest corner of Upper Wellington Street (Sheet #8)
- Christian Home Association of Mt. Hamilton at the northeast corner of Stone Church East and Upper Wellington (Sheet #8)
- Canadian Reformed Society Home for the Aged (Ebenezer Villa) on the north side of Stone Church, between Upper Wellington Street and Upper Wentworth Street (Sheet #9)



- | | | | | |
|--|--|---|---|---|
| <p>Short Term 1995-1997</p> <ul style="list-style-type: none"> Areas under construction Areas with Registered Plan of Subdivision Areas about to be Registered <p>Medium Term 1998-2000</p> <ul style="list-style-type: none"> Areas with Draft Plan of Subdivision Approved or Registered | <p>Existing Residential</p> <p>Existing Commercial</p> <p>Existing Attached Housing</p> <p>Existing Apartments</p> | <p>Existing Civic & Institutional</p> <p>Existing Industrial</p> <p>Existing Utilities</p> <p>Existing Restricted Commercial / Industrial</p> | <p>Existing Public School</p> <p>Public School Lands</p> <p>Existing Separate School</p> <p>Separate School Lands</p> | <p>Areas Planned for Retirement Homes</p> <p>Exist. Park & Recreational / Open Space</p> <p>Proposed Park & Recreational / Open Space</p> <p>Red Hill Creek Expressway Right-of-Way</p> |
|--|--|---|---|---|

FIGURE 6
STONE CHURCH ROAD
EXISTING AND
PROPOSED LAND USE
SHEET 1 of 3

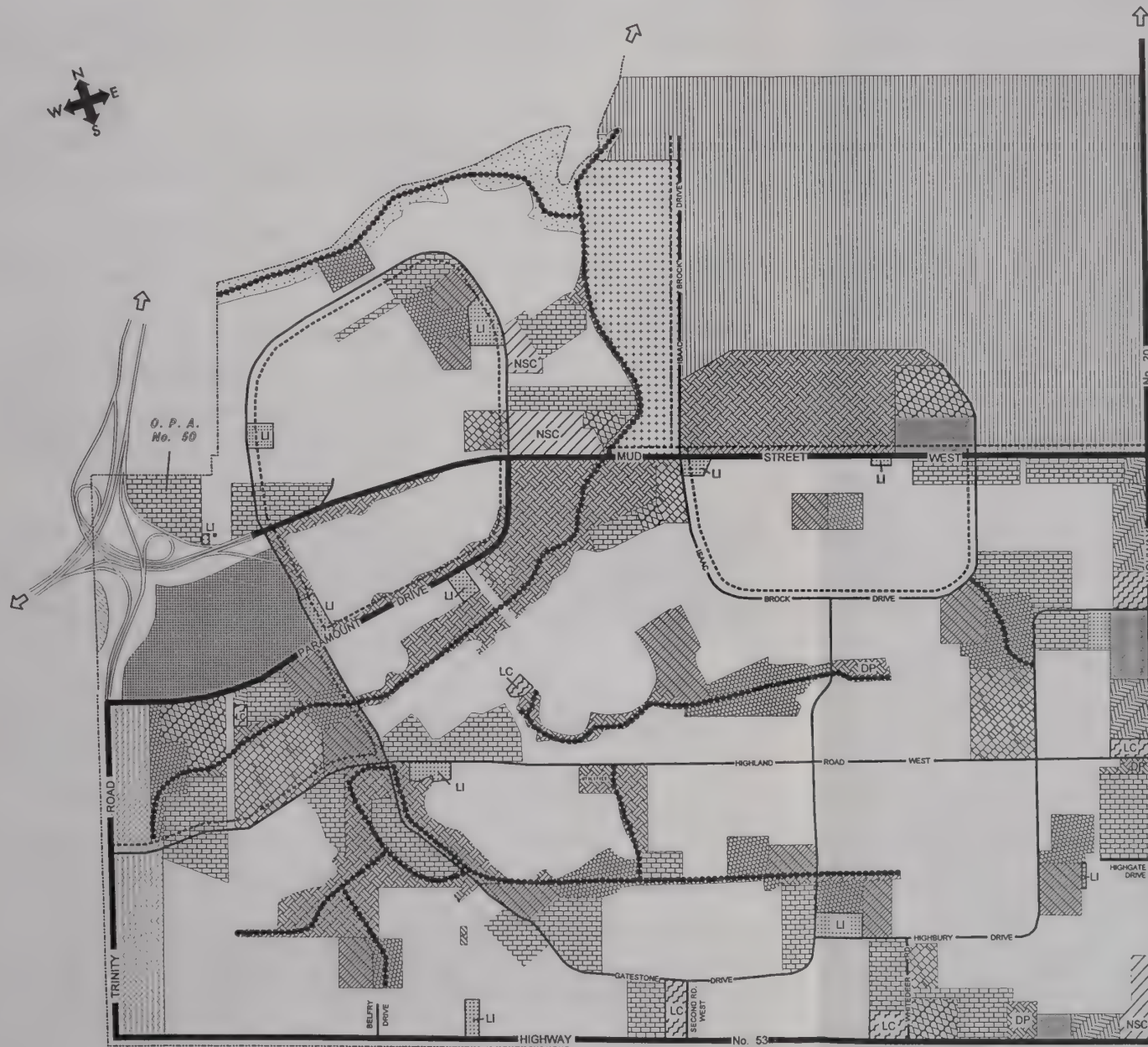




- | | | | | |
|--|---|--|--|--|
| <p>Short Term 1995-1997</p> <ul style="list-style-type: none"> Areas under construction Areas with Registered Plan of Subdivision Areas about to be Registered <p>Medium Term 1998-2000</p> <ul style="list-style-type: none"> Areas with Draft Plan of Subdivision Approved or Registered | <ul style="list-style-type: none"> Existing Residential Existing Commercial Existing Attached Housing Existing Apartments | <ul style="list-style-type: none"> Existing Civic & Institutional Existing Industrial Existing Utilities Existing Restricted Commercial / Industrial | <ul style="list-style-type: none"> Existing Public School Public School Lands Existing Separate School Separate School Lands | <ul style="list-style-type: none"> Areas Planned for Retirement Homes Exist. Park & Recreational / Open Space Proposed Park & Recreational / Open Space Red Hill Creek Expressway Right-of-Way |
|--|---|--|--|--|

FIGURE 6
 STONE CHURCH ROAD
 EXISTING AND
 PROPOSED LAND USE
 SHEET 2 of 3

A 1994 Population



Legend

Land Use Designations

	Neighbourhood Shopping Centre		Low Density Residential
	General Commercial		Medium Density Residential
	Local Commercial		Medium - High Density Residential
	Highway Commercial		Local Institutional
	Service Commercial		Institutional
	Elementary School		Escarpment Natural Area
	Open Space - Community Park DP - Detention Pond		District Boundary
	Neighbourhood Park		Arterial Road
	Special Policy Area 'A'		Collector Road
	Special Policy Area 'B'		On Street Bikeway
	Special Policy Area 'C' (West Mountain Core Area)		Off Street Bikeway and/or Walkway
	Special Policy Area 'D'		

CITY OF STONEY CREEK
PLANNING DEPARTMENT

Referenced from the City of Stoney Creek Official Plan

FIGURE 6
STONE CHURCH ROAD
EXISTING AND
PROPOSED LAND USE
SHEET 3 OF 3

There are also many seniors who live in the neighbourhoods adjacent to the road. During the public consultation, a number of seniors in these areas and other locations along the road indicated the desire to walk more if sidewalks and safe pedestrian crossing were provided.

Considerations:

These are areas where it can be expected that a large number of seniors could be walking or would walk if sidewalks are available. It can also be expected that seniors would be using transit and crossing the road in the vicinity of these facilities if access is improved.

3.4.4 Recreational/Civic Facilities

There are few commercial or civic recreational facilities within the study area (See Figure #4):

- Mountain Bowl (bowling alley) is located between Arbour Road and Pritchard Road (Sheet #19)
- Wentworth Shooting Sports Club is located at 1500 Stone Church Road East (Sheet #18)
- Hamilton Fire Department Simulated Fire and Rescue Complex is located east of Upper Ottawa Street (Sheet #16)
- Roller Gardens (Sheets #15 and 16)
- Pro-Putt Mini Golf (Sheet #15)

Adjacent to the study area the Barton Community Centre is located south of Stone Church Road on Upper James Street. The Mount Albion Conservation Area has been used in the past as a recreational property, however, the parking lot on Stone Church Road has been closed. Any new parking lots for the Conservation Area will be located on Dartnall Road (B. Duncan, pers. comm.). A new linear park is being developed south of the Red Hill Creek Expressway between Upper Wentworth Street and Upper Ottawa Street by the City of Hamilton. This park will be accessible for walkers and cyclists.

Considerations:

There are no special considerations required for any of the civic or private recreational uses in the area. Commercial recreational facilities are located in the industrial business park.

3.4.5 Jurisdictional Boundaries

The area includes five jurisdictions:

- Region of Hamilton Wentworth
- City of Hamilton
- City of Stoney Creek
- Niagara Escarpment Commission for the area within the Niagara Escarpment Protection Area (Mount Albion Conservation Area)
- Hamilton Region Conservation Authority for regulation of floodplains and areas within the Fill and Construction regulations (including Mount Albion Conservation Area)

Considerations:

All jurisdictions should be consulted during the study.

3.5 Utilities and Municipal Infrastructure

The location and status of existing utilities and municipal services in the study area were obtained from field investigations, a review of previous Region and City construction contracts and through consultation with utility agencies. Figure 7 shows the location of all major utilities in this area.

Sanitary Sewers

Sanitary sewers service most adjacent residential developments along Stone Church Road with the exception of the section from Upper James Street to West Fifth Street and some individual residential lots.

Watermains

A 1050 mm diameter trunk watermain runs along Stone Church Road from Upper Wellington Street to the reservoir at Garth Street. A 1200 mm diameter trunk watermain also runs along Stone Church Road from east of Upper Mt. Albion Road to Upper Ottawa Street. Various other watermains ranging in size from 400 mm to 900 mm also run along Stone Church Road serving both directly abutting and adjacent residential development.

Utility Companies

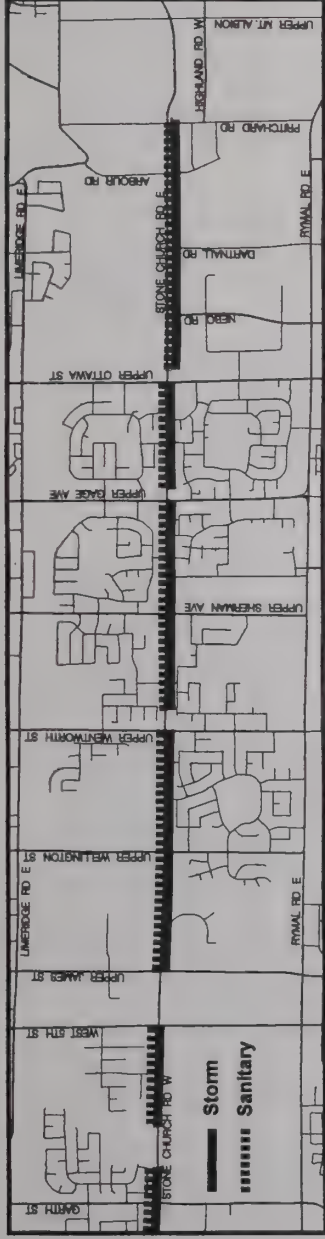
Hamilton Hydro (electrical and street lights), Bell Canada and various cable TV companies have both overhead and underground supply and distribution networks along Stone Church Road.

Ontario Hydro

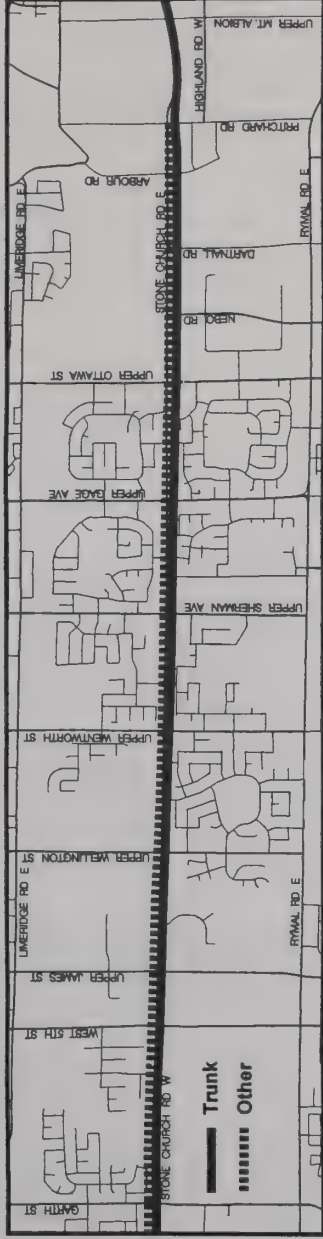
Ontario Hydro has a major transmission towerline crossing Stone Church Road east of Redmond/Ridgemount Drive between Upper Wentworth Street and Upper Sherman Avenue, and another between Pritchard Road and Upper Mount Albion Road.

Union Gas

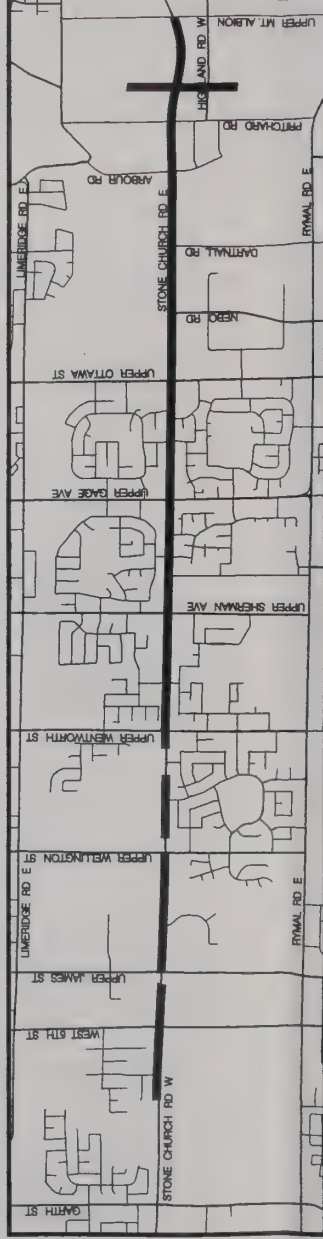
Union Gas has a 500 mm (20") high pressure main crossing the Mount Albion Conservation Area and Stone Church Road, east of Dartnall Road. The main then runs along the south property limit of the road to Pritchard Road, and then turns southerly along the east side of Pritchard Road. There also various other sizes of supply and distribution lines along the entire length of the study area.



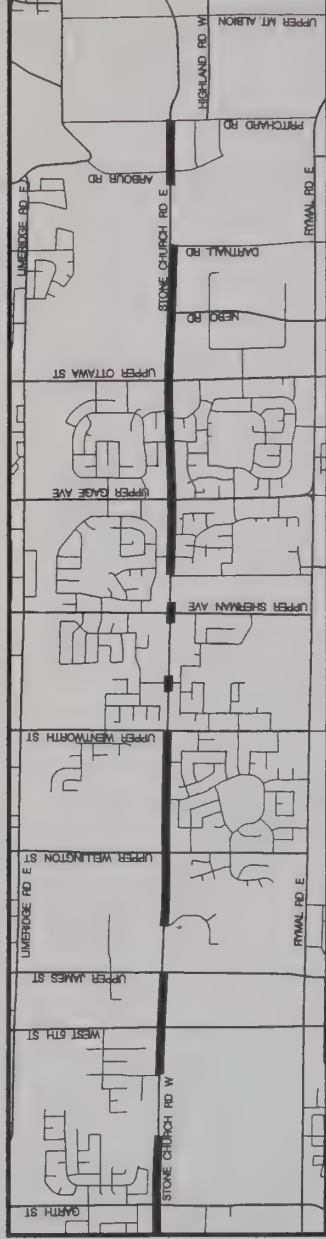
STORM & SANITARY SEWERS



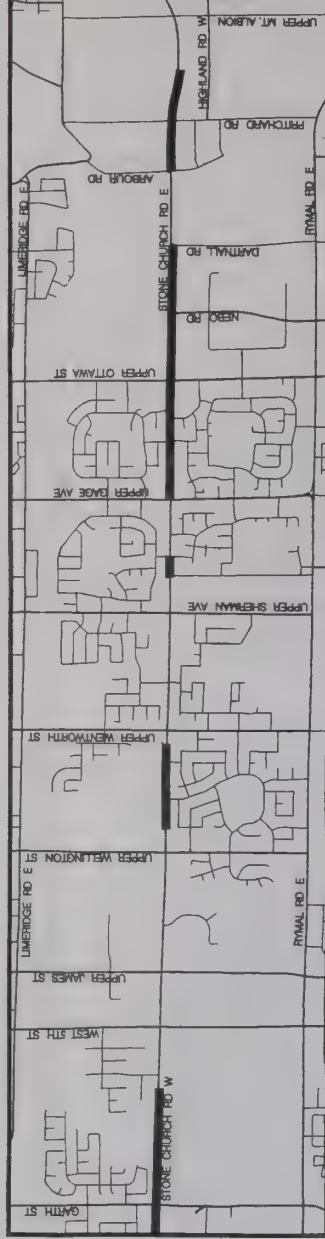
WATERMAINS



GAS PIPELINES



UNDERGROUND BELL



UNDERGROUND HYDRO



FIGURE 7
STONE CHURCH ROAD
UTILITIES & MUNICIPAL
INFRASTRUCTURE

Significant Features/Constraints:

When road reconstruction occurs, utility companies and municipal infrastructure usually use the opportunity to upgrade to a system that can accommodate future growth. The location of utilities also influences the location of features such as sidewalks, landscaping and trees. Relocations of utilities can also influence the timing of construction projects since poles, new lines etc. must often be coordinated with the road work and may be necessary prior to the road work beginning.

3.6 Transportation Facilities and Traffic Operations

This section will provide an overview of the transportation service along Stone Church Road for both existing and future conditions. Specifically this section will address the following:

- characteristics of the road
- existing and projected transit service
- existing pedestrian and cyclist facilities
- existing and projected traffic conditions
- accident history and relative rates

3.6.1 Transportation Facilities

The Red Hill Creek Expressway, Rymal Road and Stone Church Road are the three principal east-west links in the southern part of the Mountain. According to the Official Plan the Red Hill Creek Expressway is designated as a freeway and Rymal and Stone Church Roads are designated as arterial roadways. Under this functional classification system freeways are intended to accommodate the movement of large volumes of traffic at high speeds under free flow conditions. The main service provided by arterial roadways is also mobility, however, limited direct access to adjacent development is also permitted.

Further classification of the two arterial roadways leads to the description of Rymal Road as a 'major' arterial and Stone Church Road as a 'minor' arterial. This subclassification is based on the extent of the access to adjacent developments permitted on each road, and because Rymal Road moves inter-regional traffic (it is a segment of Highway 53) and Stone Church Road moves intra-regional traffic (it originates and terminates within Hamilton-Wentworth). Figure 8 illustrates the overall road pattern and transportation related characteristics of the area.

Stone Church Road is a rural two lane asphalt roadway in the section from Garth Street to Upper Gage Avenue. The road from Garth Street to West Fifth Street has a 'tar and chip' surface treatment, applied in 1991, following installation of storm and sanitary sewers. The remainder of this section to Upper Gage Avenue is asphalt which is exhibiting signs of severe pavement distress.

Stone Church Road is a designated truck route east of Upper James Street. The road has a statutory speed limit of 50km/hr.

The section from Upper Gage Avenue to Upper Ottawa Street was reconstructed a number of years ago to a four lane urban section with storm sewers and has been repaved and remarked to reflect the proposed three lanes. The section from Upper Ottawa Street to Upper Mount Albion Road is two lane rural with intermittent stretches of poor pavement.

There are currently seven signalized intersections along Stone Church Road within the study area. Upper Sherman Avenue is the only Regional Road in the "urban area" that intersects Stone Church Road that is operating without signals. All signalized intersections, with the exception of Upper James St., have left turn lanes.

The intersection of Stone Church Road with Upper Sherman Avenue, Pritchard Road, and Upper Mount Albion Road are controlled by all way stops.

3.6.2 Traffic Volumes

Table 2 shows the existing volumes of traffic along Stone Church Road in comparison to other regional roads on the Mountain. In general, it is expected that the traffic volumes on Stone Church Road will decrease following the opening of the Red Hill Creek Expressway in 1998, and will increase to current levels over the next 15-20 years.

3.6.3 Transit Service

Transit service is planned and implemented by the Hamilton Street Railway. Service is provided when demand within an area reaches a level that justifies additional buses. Transit service is intermittent along Stone Church Road and based on buses looping from a north-south road to access another north south route (See Figure 8). Bus stops are located on these loops. There is no service that runs along the entire length of the road. At this time, however, an east-west route is anticipated in the future. This will mean additional bus stops will be placed along the road. The public identified a need for additional bus service along the road.

There are also some 'school specials' that run in peak hours along Stone Church Road. Both the Hamilton-Wentworth Separate School board and the City of Hamilton School Board run bus routes along Stone Church Road.

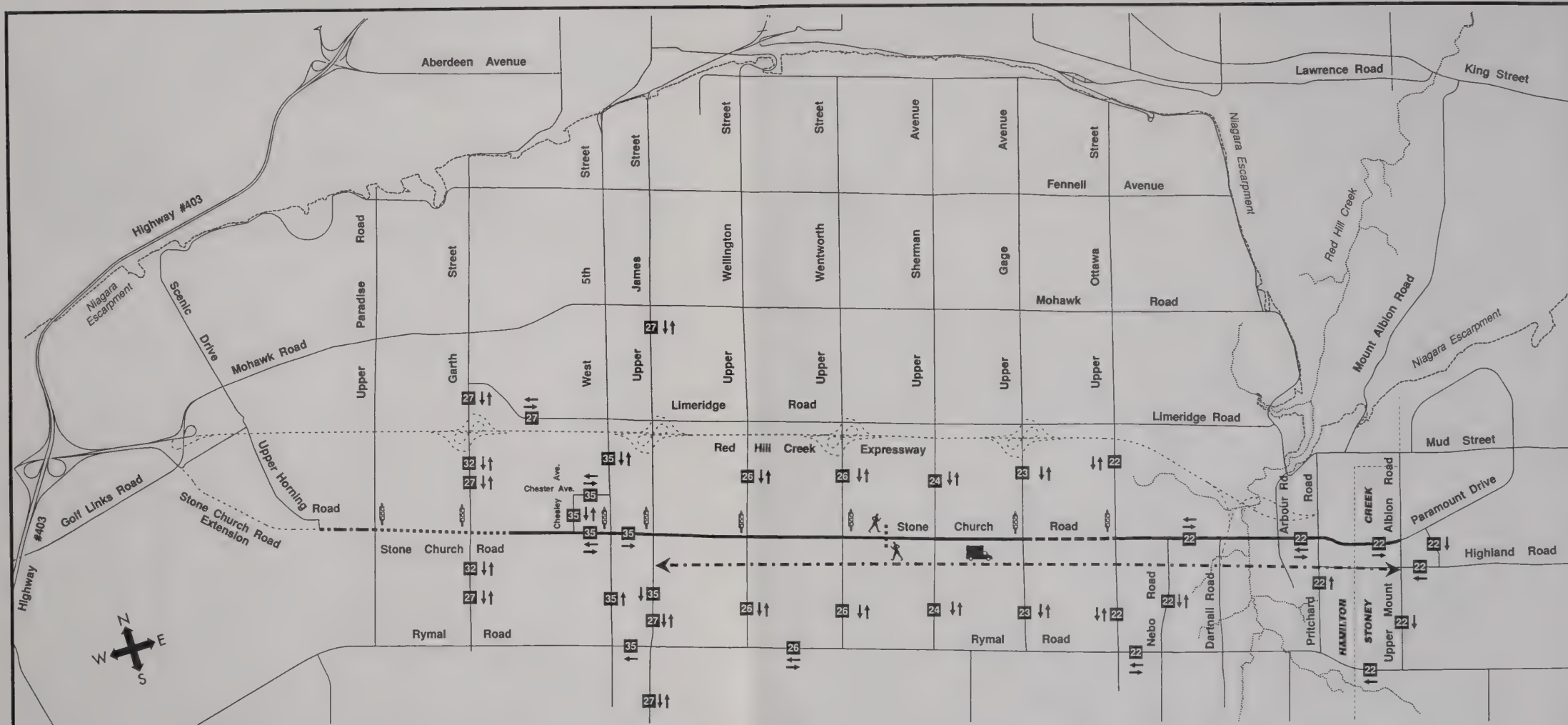
Considerations:

The road will experience increased bus use in the future.

3.6.4 Accident History

The accident record is not only an indicator of the level of safety on the roadway, it is also a reflection of the adequacy of the roadway design. Roadway safety is influenced by three elements: the driver, the vehicle and the roadway. A persistent occurrence of collisions at any location is usually an indication of inadequate traffic control or roadway design.

Accident statistics based on factual data provide insight into the general state of the roadway's safety and can assist in the development of corrective measures. In general, the three statistics that traffic professionals use to identify problems are: accident frequency, accident severity and accident rates. Each of these statistics, as they pertain to Stone Church Road, are discussed in the following paragraphs.



- 2 lanes with ditches
- - - - 2 lanes with curbs and gutters
- . - . 3 lanes with curbs and gutters
- 4 lanes with curbs and gutters



- Signalized intersection
- High volume of pedestrian crossing (Redmond Dr. - Ridgemont Dr.)
- Designated truck route
- Bus route - crossing or using Stone Church Road

- 22 Upper Ottawa
- 23 Upper Gage
- 24 Upper Sherman
- 26 Upper Wellington
- 27 Upper James
- 32 Garth
- 35 College

FIGURE 8
TRANSPORTATION
FACILITIES

Table 2: Existing Traffic Volumes for Mountain Arterials

Street	Garth Street to West 5th Street	Upper Wellington Street to Upper Wentworth Street	Upper Gage Avenue to Upper Ottawa Street
Stone Church Road	9,000	9,000	12,000
Mohawk Road	27,000	26,000	15,000
Limeridge Road	12,000	19,000	13,000
Rymal Road	18,000	20,000	19,000

Accident Frequency

In the case of Stone Church Road from Garth Street to Pritchard Road, there has been a total of 381 accidents from 1987 to October 1993, inclusive (55.8 accidents per year). The majority of these accidents (63.3%) have occurred at the intersections. This is well above the 32.4% average for all roads in the Region, excluding Provincial highways. Pedestrians and cyclists were involved in only 0.8% and 1.8% of the Stone Church Road accidents. These figures are lower than the 4.6% and 2.7% averages for pedestrians and cyclists, respectively.

An analysis of the types of collisions indicate that there are essentially 5 types of collisions occurring on Stone Church Road. These statistics are shown in Table 3. The rear-end, right angle and left turn-with-opposing through type collisions all generally are associated with turning movements. The single motor vehicle collisions are usually indications of an adverse environmental (e.g. wet pavement), driver (e.g. impaired), or vehicle (e.g. failed brakes) condition. The side swipe accidents may be either a result of a turning movement or an improper passing manoeuvre.

Accident Severity

Personal injury accidents account for 41.5% of all collisions on Stone Church Road. This is marginally higher than the average of 36.9% for all roads in the Region. There have been no fatal accidents on this section of Stone Church Road.

Accident Rates

The most accurate method of comparing collision statistics is through accident rates. Accidents are essentially random occurrences, however, the probability of the occurrence of a collision increase with increased exposure, i.e., the longer the road or the more vehicles using the road the greater the exposure. Exposure based accident rates account for the differences between roadway lengths and volumes and allow a true comparison of accident statistics.

In a very broad sense the nature of collisions is different at intersections and on roadway segments. Therefore, accident rates are generally calculated separately for intersections and roadway sections. In order to make use of available data, accident rates for Stone Church Road were calculated for signalized intersections and for roadway segments with the unsignalized intersection collisions included. The resultant rates are shown in Tables 4 and 5 for signalized intersections and mid-block segments, respectively.

According to the 1993 Hamilton Wentworth Collision Report the average collision rate for signalized intersections in the Region is 0.72 collisions per million vehicles entering (MVE). All of the signalized intersections on the study section of Stone Church Road are below the Regional average. It should be noted that the collision rate for Stone Church Road at Upper Sherman Avenue, although not signalized, is above the average for signalized intersections.

The average collision rate for all arterial roadways in the City of Hamilton between 1987 and 1993, inclusive is 2.26 collisions per million vehicle km (MVK). All of the roadway segments under study have collision rates below this average.

Considerations:

Stone Church Road is operating relatively "safely". However, some improvements can be made to reduce collision frequency.

**TABLE 3: Collision Types for Stone Church Road
(from Garth Street to Pritchard Road)**

Collision Type	# of Collisions	% of Total
Rear End	100	26.2
Side Swipe	18	4.7
Right Angle	136	35.7
Left-turn with Opposing Through	62	16.3
Single Motor Vehicle	45	11.8
Other	20	5.3
Total	381	100.0

TABLE 4: Signalized Intersection Accident Record 1987-1993

Intersection	# of Accidents	# of Injury Accidents	# of Fatal Accidents	Accident Rate (MVE)
Garth Street	15	4	0	0.53
West 5th Street	7	2	0	0.25
Upper James Street	49	25	0	0.63
Upper Wellington Street	12	2	0	0.34
Upper Wentworth Street	14	9	0	0.40
Upper Sherman Avenue*	27	13	0	0.81
Upper Gage Avenue	25	10	0	0.57
Upper Ottawa Street	21	12	0	0.51
Average For All Signalized Intersections from 1989-1993	24	---	---	0.72

* The Upper Sherman Avenue intersection is not signalized, but will be signalized during the reconstruction, pending approval of this study.

TABLE 5: Mid-Block Accident Record 1987-1993
(including collisions at all unsignalized intersections)

Mid-Block Section	# of Accidents	# of Injury Accidents	# of Fatal Accidents	Accident Rate (MVE)
Garth Street to West 5th Street	17	6	0	0.64
West 5th Street to Upper James Street	13	9	0	1.28
Upper James Street to Upper Wellington Street	9	3	0	0.61
Upper Wellington Street to Upper Wentworth Street	19	5	0	1.02
Upper Wentworth Street to Upper Sherman Avenue	35	13	0	2.04
Upper Sherman Avenue to Upper Gage Avenue	23	10	0	1.18
Upper Gage Avenue to Upper Ottawa Street	31	14	0	2.15
Upper Ottawa Street to Pritchard Road	64	21	0	2.26
Average For All City of Hamilton Arterials 1989-1993	----	----	----	2.26

3.7 Sidewalks and Pedestrian Crossings

Pedestrian Volumes

Traffic counts performed at the signalized intersections also include the number of pedestrians who are using the intersection. These counts, if extrapolated to determine pedestrian activity, indicate that the number of pedestrians currently walking along Stone Church Road from Garth Street to Upper Wellington Street and from Upper Ottawa Street to Nebo Road is relatively low (approximately 30 to 40 pedestrians in 7 hours). They also indicate that the pedestrian activity along Stone Church Road from Upper Wentworth Street to Upper Gage Avenue is moderate (about 80 to 150 pedestrians in 7 hours).

Pedestrian crossing volumes at all signalized intersections were light to moderate (i.e., 1 to 99 pedestrians in 7 hours). A specific pedestrian count performed in the vicinity of the intersection of Redmond/Ridgemount Drive and Stone Church Road observed 299 pedestrians crossing Stone Church Road in the busiest 7 hours of the day. This is a relatively large number of pedestrians crossing and consists mainly of students crossings to and from St. Jean de Brebeuf Secondary School.

Sidewalks

Sidewalks are a local municipality responsibility. Funding to build sidewalks is obtained through the Local Improvement Act which allows municipalities to recover construction costs from adjacent property owners. Typically, sidewalks are constructed when there is public demand or when development occurs. Therefore, the pattern of sidewalks is sometimes discontinuous. This is true of Stone Church Road where there are areas of concrete sidewalks adjacent to recently developed residential and commercial areas and no sidewalks adjacent to vacant land.

Temporary asphalt sidewalks are located in various sections along the corridor. However, these walks tend to last a short period of time relative to concrete walks and are difficult to maintain when the asphalt begins to crumble.

There are no sidewalks along the south side from Garth Street to Chesley Street; along the north side from West Fifth Street to Upper Wellington Street, or in the area east of Upper Ottawa Street. Figure 4, show the location of concrete and asphalt sidewalks and indicates areas where there are no sidewalks.

The lack of sidewalks and the discontinuity in the location and type of sidewalks presents a problem for children and those people who are unable to walk easily along the gravel shoulder. In winter conditions, walking on the gravel shoulder often is not possible due to snow storage.

Pedestrian Crossings

All of the signalized intersections on Stone Church Road are equipped with pedestrian signal heads (i.e., the units that display the 'walk' and 'don't walk' signals) and marked crosswalks to assist pedestrians who are crossing the road. These locations clearly provide the pedestrian with a designated portion of time where they have the right-of-way to cross the street.

Adult school crossing guards assist school aged children in crossing Stone Church Road at Garth Street and at Taymall Street/Quinn Avenue. The guards are on duty during the hours when children are walking to and from school.

Painted crosswalks are located at all signalized intersections, adult crossing guard locations and on the east leg of the intersection of Stone Church Road and Chesley Street.

Painted crosswalks at Chesley Street and at the crossing guard locations when the guard is not on duty, indicate the preferred crossing location but do not (according to the Highway Traffic Act and the Regional Traffic By-law R89-038) give pedestrians the right-of-way over vehicular traffic. In other words, drivers are not obligated by law to yield the right-of-way to pedestrians in marked crosswalks unless they are governed by another traffic control device, i.e., a traffic signal or a crossing guard.

Problems with the ability to cross the road safely have been identified by the public at the Upper Sherman Avenue intersection. This intersection is currently controlled by an all-direction stop and accommodates a relatively high volume of vehicular traffic. The public has also stated that students crossing the road at the hydro corridor between Upper Sherman Avenue and Upper Wentworth Street pose a 'hazard'.

Considerations:

The public voiced a strong demand for concrete sidewalks along both sides of Stone Church Road and at crossings to improve the safety of pedestrians. The City of Hamilton Pathways Committee (a committee of volunteers working to obtain better transportation facilities for disabled people) strongly advocated the need for more accessible and consistent sidewalks and pedestrian crossings.

3.8 Bicycle Facilities

Bicycles with wheel diameters greater than 24 inches are considered to be vehicles and are legally required to drive on the road under the Highway Traffic Act. This recognizes, on the one hand, that small children should not be cycling on the road and that adults, on the other hand, should be cycling on the road. Adults cycling on the sidewalk can pose a hazard to pedestrians and they run the risk of accidents with vehicles backing unto the road.

The Hamilton-Wentworth Regional Bicycle Implementation Plan identified that Stone Church Road should be upgraded to provide safer cycling on the road. The paved lanes are narrow and the gravel shoulders are difficult for cyclists to use. Cyclists, as a result, tend to delay traffic and this can cause driver irritation and unsafe driving habits.

During this study, both commuter and recreational cyclists' expressed a concern with the current condition of Stone Church Road and requested that the road be upgraded to allow more comfortable and safe cycling on the road. There is also a demand for recreational off-road cycling.

Considerations:

More and more people are cycling as a form of recreation and commuting (to work, school and shopping areas). Upgrading the road should take into consideration that providing better cycling facilities reflects Vision 2020 objectives and the demand from the public.

4.0 SELECTION OF THE ROAD PLAN

4.1 Planning Solutions

4.2 Design Alternatives

4.0 SELECTION OF THE ROAD PLAN

The purpose of this section is to provide clear documentation of the decision making and public consultation process that led to a preferred road plan. The first step in an environmental assessment is the identification of problems to be solved or opportunities available. Section 1.4 lists the problems identified by the Roads Department for Stone Church Road. The public confirmed those problems and also identified problems with the drainage from the road running off onto adjacent property, problems with speeding, and an increase in the number of vehicles using the road including trucks.

There are two main decisions that lead to a plan for the road:

1. selecting the best solution to the problems that have been identified (section 4.1.1-4.1.3). This is called the "Planning Solution". This could result in making changes to other roads or making non-structural changes such as adding signs; and,
2. selecting the best way to build the project (sections 4.2.1-4.2.3). This is called the "Design Alternative" and could include, for example, determining how many lanes to widen or the type of bridge to use to cross a stream.

The following sections describe how the above decisions have been made that lead to the preferred road plan.

4.1 Planning Solutions (Phase II)

In this study, the development and comparison of planning solutions included the following:

- selection of the factors that would be used to compare the possible solutions; public and agency input assisted in determining the features of the area that are important
- identification of reasonable ways to solve the problems
- evaluation and selection of a preferred solution by the Region
- public and agency review of possible solutions and recommendations for a solution
- re-examination of the problems and solutions as a result of the public consultation to determine if the Region's preferred solution is acceptable
- public workshop to allow the public an other opportunity to examine the problems and solutions in more detail and to recommend a preferred solution
- confirmation of the preferred solution

4.1.1 Evaluation Factors

The next step in the process, after the problems have been defined, is to decide how to compare the possible solutions. This is done by choosing factors that are significant or important to the public, agencies and the Region.

The list of evaluation factors was developed from the inventory of existing features and it considered public opinions about important features. Through the public consultation process, for example, the public expressed a very strong concern that:

- the residential character of the road be maintained
- trees are an expression of residential character and should be preserved
- as little property as possible be acquired in order to reduce the impact of the widening (build within 66 foot right of way)
- pedestrian safety should be enhanced
- ways to slow traffic should be considered

Regional considerations included:

- drainage must be improved
- maintenance costs should be reduced
- congestion caused by left turning vehicles should be reduced
- pavement should be upgraded
- a space for cyclists should be provided
- the local municipality should be encouraged to provide sidewalks
- impacts to the environment should be minimized

All regional projects must conform to the policies of the Regional Official Plan. Table 6 lists and explains the evaluation factors used to compare differences between alternative solutions.

4.1.2 Alternative Ways to Solve the Transportation Deficiencies

There are three problems with traffic service that have been identified:

- 1) pedestrians - the sidewalk along the road is not continuous
- 2) bicycles - there is no space on the road for cyclists
- 3) motorized vehicles - lane widths are narrow, the quality of pavement is low, and congestion and delays are common from left turning vehicles

In addition to traffic issues, the road drainage system is not effectively removing water from the road.

Pedestrians

Through the public consultation process it became clear that there is a demand for a continuous sidewalk along the road to provide a safe place for pedestrians to walk. The need for safe ways to cross the road was also identified. Although the sidewalk construction is the responsibility of the City of Hamilton and is subject to funding through the Local Improvement Act, the Region recognizes the need to promote walking for all people and supports the need to construct sidewalks. Therefore, this project assumed that any reconstruction work will include provisions for sidewalks and the Region will continue to work with the City of Hamilton to achieve this.

TABLE 6: Evaluation Criteria

Criterion	Indicator	Objective
Physical/Biological		
1. Surface Water	● change in flow (quantity and quality) to Red Hill Creek ● improvement to stormwater drainage	● minimize quantity of untreated stormwater into Red Hill Creek ● reduce flooding of adjacent properties by ensuring that stormwater run-off from road is collected
2. Vegetation	● trees/landscaping removals or impacts ● rare or endangered species affected	● minimize number of tree/landscaping removals and reduce overall impact to trees/landscaping ● avoid removal of rare or endangered species
3. Fish & Wildlife	● area of fish habitat affected (in Red Hill Creek) ● area of wildlife habitat/corridors affected	● avoid/minimize impact to fish habitat (if not possible, compensate for loss) ● minimize loss of wildlife habitat and reduction/barriers to wildlife corridors
Heritage Buildings	● property required	● minimize property requirements
Land Uses	● ability to support access to existing & proposed land uses: - commercial - institutional - senior citizen facilities - recreation facilities ● disruption or loss of use to commercial properties ● minimum property acquisition within a sixty-six foot right of way	● transportation system must be able to accommodate existing and proposed land uses ● minimize impact on commercial property ● minimize amount of property required for reconstruction - n.b. when land develops the Region requests dedication of road right of way to designated road right of way (Official Plan)

TABLE 6: Evaluation Criteria (Continued)

Criterion	Indicator	Objective
Community	● ability to maintain character of neighbourhoods	● enhance or maintain the character of area: - Garth Street to Upper Ottawa Street is residential - Upper Ottawa Street to Pritchard Road is commercial/industrial
Transportation Facilities & Traffic Operations	● potential for reduced volume of traffic ● potential for reduction in accident rates ● future transit service should be accommodated ● safety of pedestrians ● safety of cyclists	● increased traffic volumes should not be encouraged ● accident rates should not increase ● ensure road reconstruction provides ability for buses to use road ● improve pedestrian safety ● provide a safer environment for cyclists
Maintenance of Road Drainage System	● reduction in maintenance costs	● reduce the resources required to maintain drainage systems
Pavement	● improvement to pavement and road base	● ensure that road is built to withstand existing traffic volumes

Cyclists

The Regional Bicycle Implementation Plan supports and promotes the provision of space on the road for cyclists. This recognizes that not all cyclists will feel comfortable cycling on the road and that small children should not be cycling on the road. It encourages people to use the road for commuting to work, shopping and school. This approach was supported by the public. The public expressed a concern with the need to provide safe cycling and although many people would prefer to have a space off the road for cyclists, there was a realization that there are not many areas where this is possible. The public who filled out comment sheets at the second public information centre supported the extra space on the road for cyclists. Therefore, this project assumed that space will be provided on the road for cyclists.

The following is a comparison of alternative bikeway positions in the road right-of-way:

Bikeway Type	Comments	Assessment
Shared Use Lane	• Encourages road sharing • Requires confident cycling in traffic • Enforces rules of the road at intersections	Acceptable
Bicycle Lane	• Identifies cyclists' space • Encourages less experienced cyclists • May create confusion at intersections • Requires more pavement • May collect debris	Acceptable
Boulevard	• Creates conflicts at intersections and driveways • Needs relocation of poles, hydrants, etc. • Restricts overtaking by cycling • Encourages wrong-way riding	Unsafe
Sidewalk	• Creates conflicts at intersections and driveways • Interferes with pedestrians • Encourages wrong-way riding • Is against Region and City By-laws	Unsafe

Motorized Vehicles

The following three solutions to providing better facilities for vehicles were compared for their ability to meet public and Regional objectives:

1. Do nothing

The environmental assessment process requires that municipalities closely examine the need for the road reconstruction and assess implications of not making changes to the road. The "do nothing" alternative would mean:

- no major reconstruction work
- repaving and maintenance of the surface only
- the number of lanes and the gravel shoulders and ditches would remain the same

2. Improve the ditches and lane widths (maintain 2 lanes)

- upgrading the ditches to ensure that stormwater reaches drainage systems without flooding adjacent properties
- widening the two lanes to municipal standard widths
- maintaining a gravel shoulder
- reconstruction of the road base and repaving of the road surface
- additional pavement width to provide space for cyclists using the road
- design to include sidewalks along the entire length of the road
- improve intersections where necessary

3. Reconstruct and widen the road and provide storm sewers for drainage

- widen lanes to provincial standards and add lanes to reduce congestion (option of 2, 3 or 4 lanes)
- reconstruction of the road base and repaving of the road surface
- additional pavement width to provide space for cyclists using the road
- sidewalks along the entire length of the road
- improve intersections where necessary

The public requested that a 2 lane urban section also be evaluated if Solution #3 is chosen. Therefore, the Region added this to the list of options.

4.1.3 Comparing the Planning Solutions

A preliminary evaluation of the planning solutions was presented to the public at the first information centres. In order to provide the public with more detailed information on the potential solutions, a workshop was held to review the material presented at the information centres. Table 7 explains the Region's Evaluation of Planning Solutions.

The public re-examined these planning solutions at the workshop and confirmed the preferred solution (to reconstruct and widen) is acceptable. The public requested that widening of the road be sensitive to the public concerns listed in Section 4.2 and that the public be given another opportunity to review the preferred design.

4.2 Design Alternatives (Phase III)

Design alternatives for reconstruction and widening were based on the following assumptions:

- sidewalks would be included in all design options, however, the sidewalk should be constructed to minimize damage to trees and to reduce the need for additional property
- provision for cycling on the road will be included in all design options
- the undeveloped or industrial/commercial east section of the road may have different design requirements than the developing residential west section
- all design alternatives must provide safe travel for all modes of transportation (including cycling, walking, and transit)

TABLE 7: Evaluation of Planning Solutions

Evaluation Criterion	Do Nothing	Improve Ditches; Widen 2 Lanes to Minimum Municipal Standards; Sidewalks; Bicycle Facilities	Reconstruct with Storm Sewers; Widen (2, 3, 4 lanes); Sidewalks; Bicycle Facilities
<u>Physical/Biological Factors:</u>			
1. Surface Water			
a) Is there an anticipated change in the flow to the Red Hill Creek?	a) no	a) no, some infiltration of stormwater in ditches	a) minor increase in quantity of untreated stormwater
b) Will there be an improvement to the stormwater collection system?	b) no	b) yes, improves ditches	b) yes, directs all runoff to storm sewers
2. Vegetation			
a) Will trees or landscaping be removed or impacted?	a) no	a) yes, due to changes to ditches and installation of sidewalks	a) yes, due to installation of sidewalks, changes to ditches, and road widening
b) Will rare or endangered species be affected?	b) no	b) no	b) no
3. Fish & Wildlife			
a) Will fish habitat be affected in Red Hill Creek?	a) yes, minor changes to stream crossing due to changing height of road *	a) yes, minor changes to stream crossing due to changing height/width of road and sidewalks	a) yes, change to stream crossing width due to changing height/width of road and sidewalks
b) Will wildlife habitat or corridors be affected?	b) yes, height of road in Mount Albion Conservation Area will change access and continuity of corridor	b) yes, height of road in Mount Albion Conservation Area will change access and continuity of corridor	b) yes, height of road in Mount Albion Conservation Area will change access and continuity of corridor

* Changes in Mount Albion Conservation Area will be required to accommodate a stormwater management pond associated with the Red Hill Creek Expressway-Dartnall Road interchange, regardless of the planning solution selected in this study.

TABLE 7: Evaluation of Planning Solutions (Continued)

Evaluation Criterion	Do Nothing	Improve Ditches; Widen 2 Lanes to Minimum Municipal Standards; Sidewalks; Bicycle Facilities	Reconstruct with Storm Sewers; Widen (2, 3, 4 lanes); Sidewalks; Bicycle Facilities
Heritage Buildings Will Barton Stone United Church property be required adjacent to the road?	no	yes, some property will be required for sidewalk and intersection construction	yes, some property will be required for sidewalk construction and/or road reconstruction
Land Uses (Existing & Proposed) a) Will existing and proposed land uses be supported? b) Will vehicular access be improved for commercial and institutional development and senior citizen and recreation facilities?	a) no, road is unable to provide adequate access to neighbourhood land uses b) no	a) no, road is unable to provide adequate access to neighbourhood land uses b) no	a) will depend on the number of lanes chosen b) will depend on the number of lanes chosen
Community Character a) Does the solution reflect the character of the adjacent neighbourhoods? b) Can changes be done within existing right of way?	a) yes b) n/a	a) yes b) yes	a) will depend on the number of lanes chosen and streetscaping features b) will depend on the number of lanes chosen

TABLE 7: Evaluation of Planning Solutions (Continued)

Evaluation Criterion	Do Nothing	Improve Ditches; Widen 2 Lanes to Minimum Municipal Standards; Sidewalks; Bicycle Facilities	Reconstruct with Storm Sewers; Widen (2, 3, 4 lanes); Sidewalks; Bicycle Facilities
Transportation Facilities & Traffic Operations			
a) Will traffic volumes be reduced?*	a) no changes anticipated (limited capacity on road)	a) improved lane widths may encourage more traffic	a) improved lane widths and additional lanes may encourage traffic
b) Will accident rates be reduced?	b) no	b) no	b) yes
c) Will the road be capable of handling increased transit service?	c) no	c) yes, minor increase in capability	c) yes, increased capability
d) Will the safety of pedestrians be increased?	d) no	d) yes	d) yes
e) Will safety of cyclists be increased?	e) no	e) yes, paved shoulders increase safety	e) yes, provisions for space on the road would increase safety
Maintenance of Road Drainage System			
Will maintenance costs be reduced?	no, costs will increase	no, increased costs to maintain more ditches & culverts	yes, little maintenance required for storm sewers
Pavement			
Will the road base be improved?	no	yes	yes

* The Red Hill Creek Expressway is anticipated to result in reduced traffic volumes on Stone Church Road (see sec. 3.5.2).

4.2.1 Sidewalk/Crossing Alternatives

Sidewalks can be built with a boulevard separating it from the road or with no boulevard. The most desirable location is to have a boulevard separating the sidewalk from the travelled lanes of the road. This creates a clearly defined space between the road and the pedestrian. In this project, however, one of the main objectives is to minimize the impact to trees. In order to achieve this objective, the sidewalk location will vary in order to avoid trees, where possible. Figure 9 illustrates sidewalk location options.

The Region met with members of the City of Hamilton Pathways Committee to determine the features of the road that are important for the disabled. They reiterated the importance of providing sidewalks and provided design criteria for sidewalks and crossing areas that could be used in the detail design stage.

4.2.2 Bicycle Lane Alternatives

There are two possible ways to provide space for bicycles on the road:

- 1) mark a lane for bicycles only
- 2) provide a wider curb lane and mark this both on the road and on signs to show that this space is to be shared by motorized vehicles and bicycles

Figure 10 illustrates Bicycle Facility Alternatives.

The preferred option is the wider curb lane (#2) because a marked lane (#1) can lead to confusion at intersections especially where there are right turn lanes. The rural road design alternative only provides space for cyclists on a paved shoulder. (See Section 4.3.3)

4.2.3 Road Design Alternatives

In response to comments received at the first public information centres, the following design alternatives for the road were considered:

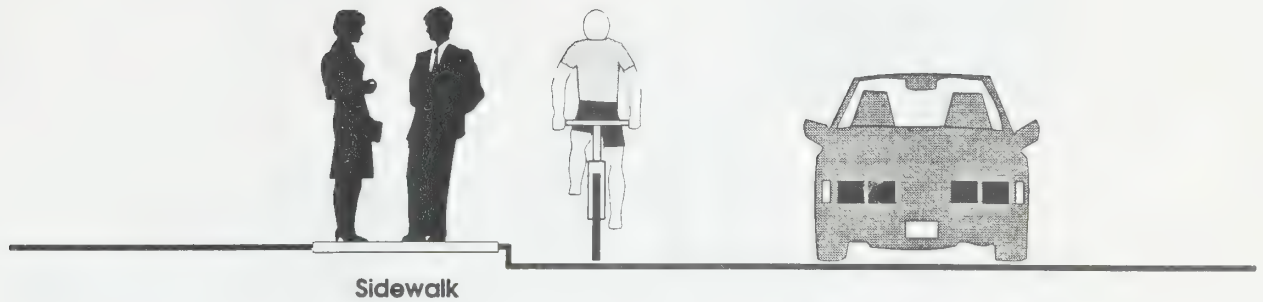
1. two lane rural road upgrade
 - upgrade lanes to provincial standards
 - gravel shoulders
 - ditches
2. two lane urban road with curbs and gutters
3. three lane urban road with curbs and gutters
4. four lane urban road with curbs and gutters

Initially, the Roads Department included a five lane road as a possible design option. However, traffic analysis indicated that five lanes were not required. The public also expressed strong opinions that five lanes would not be acceptable. Therefore, the five lane option was dropped from the list of possible options. Figure 11 illustrates the cross-sections for each design alternative, and Figure 12 illustrates the alternatives in plan view.

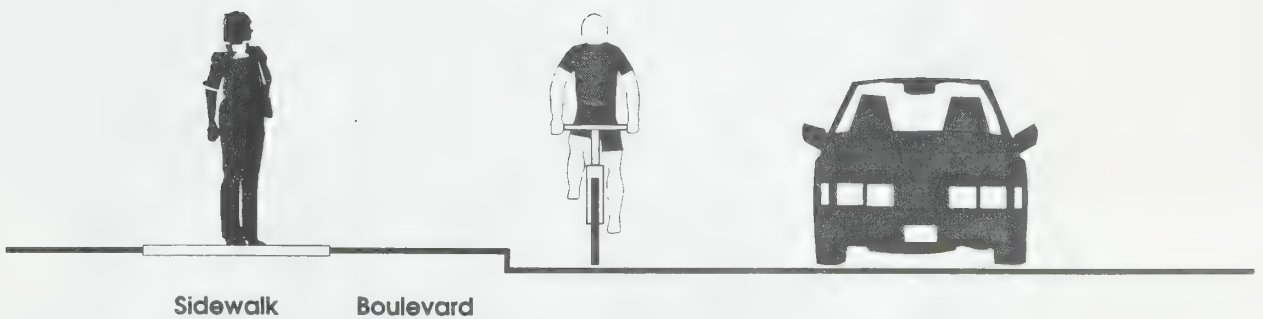
4.2.4 Comparison of Road Design Alternatives

Table 8 shows the comparison of the road design alternatives. The participants at the public workshop examined all design alternatives and concluded that widening to three lanes would be acceptable under the following conditions (see Appendix C for all comments received in Phase II):

FIGURE 9: Sidewalk Location Options

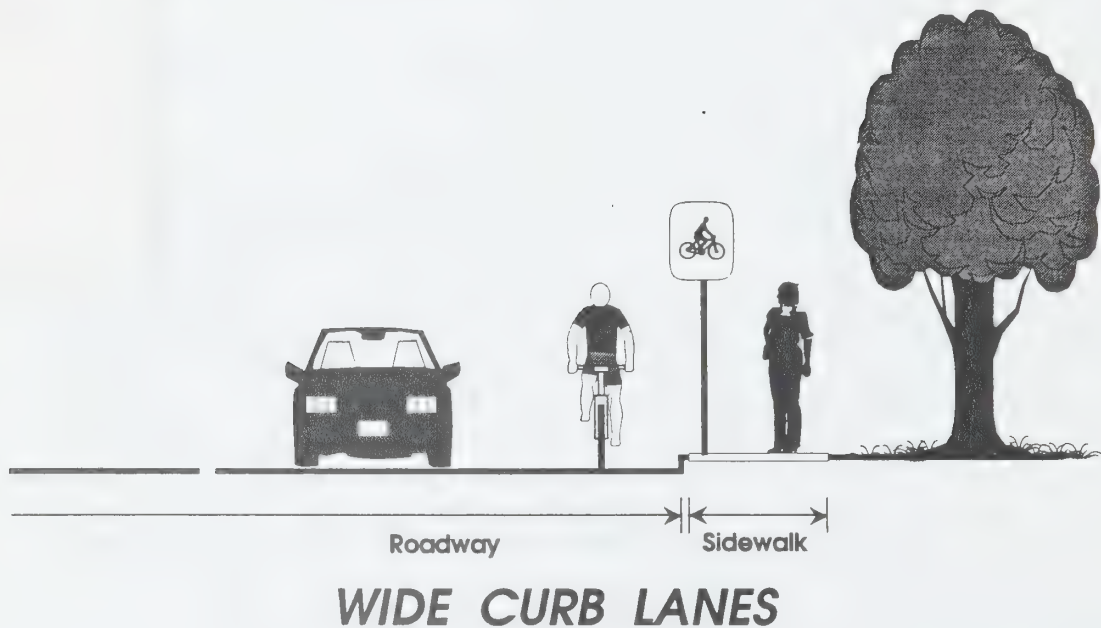
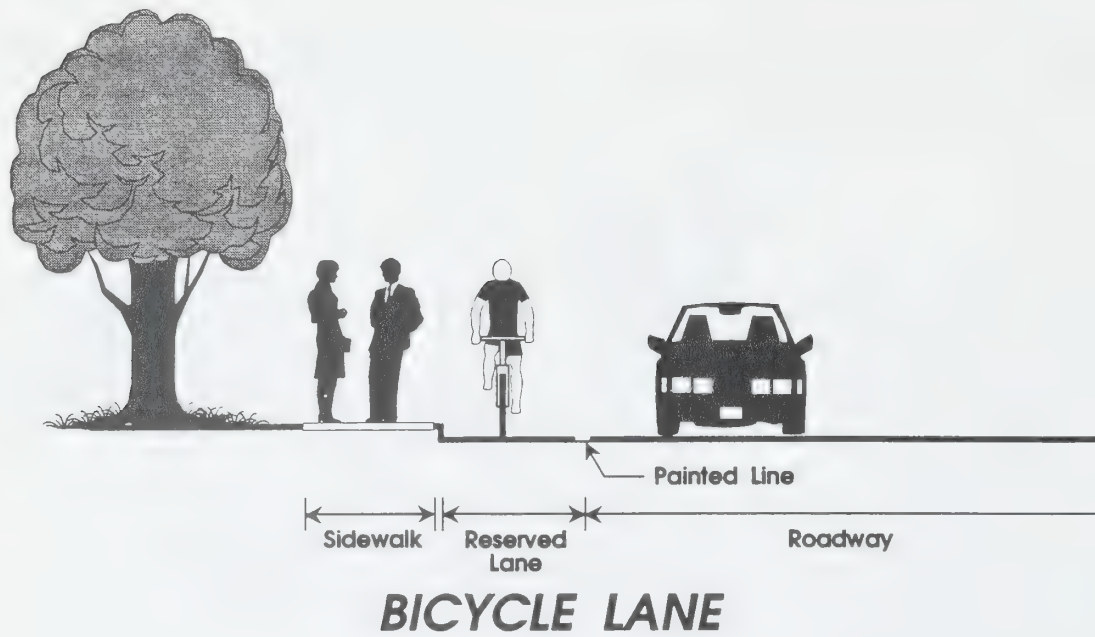


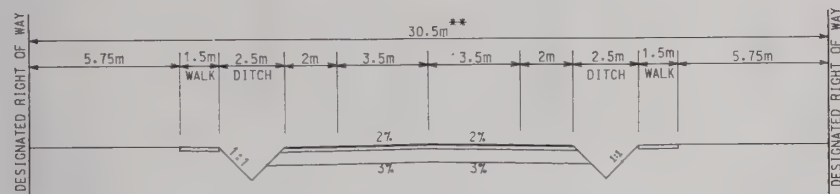
Sidewalk - no Boulevard



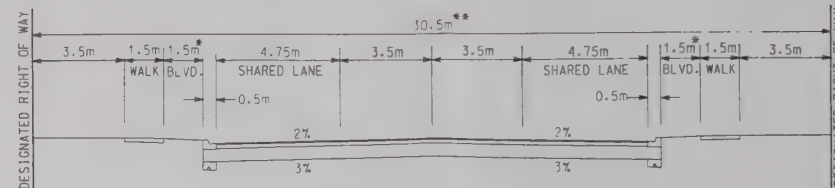
Sidewalk - with Boulevard

FIGURE 10: **Bicycle Facility Alternatives**

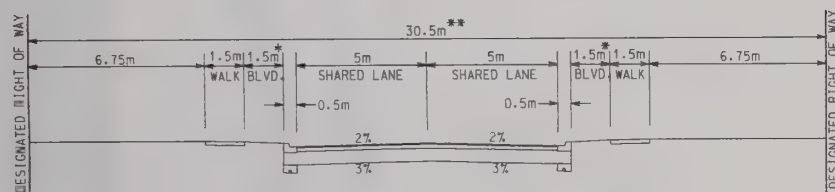




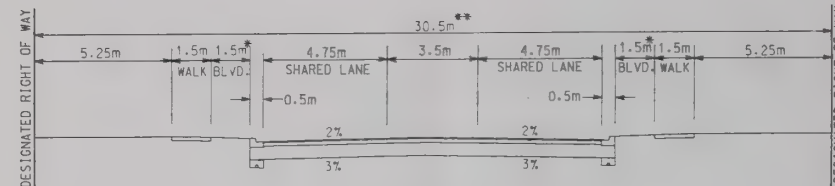
2-LANE RURAL



4-LANE URBAN



2-LANE URBAN



3-LANE URBAN
PREFERRED ALTERNATIVE

*PREFERRED BOULEVARD WIDTH

**EXISTING ROAD ALLOWANCE
VARIES ALONG THE LENGTH
OF THE ROAD

SCALE 1:200

FIGURE 11
STONE CHURCH ROAD
DESIGN ALTERNATIVES
CROSS-SECTIONS

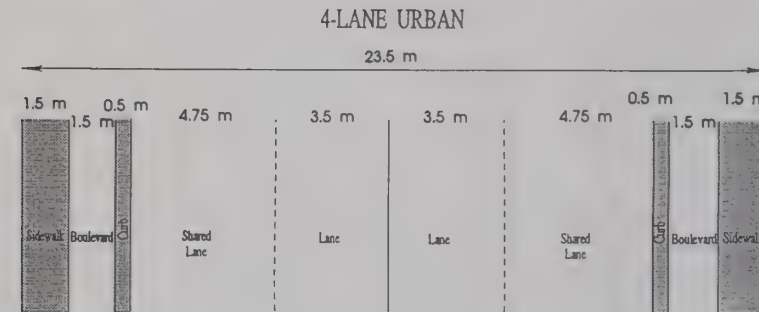
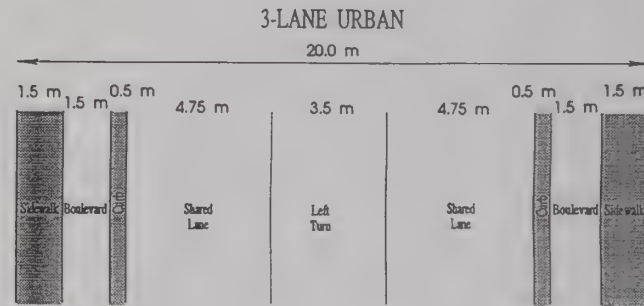
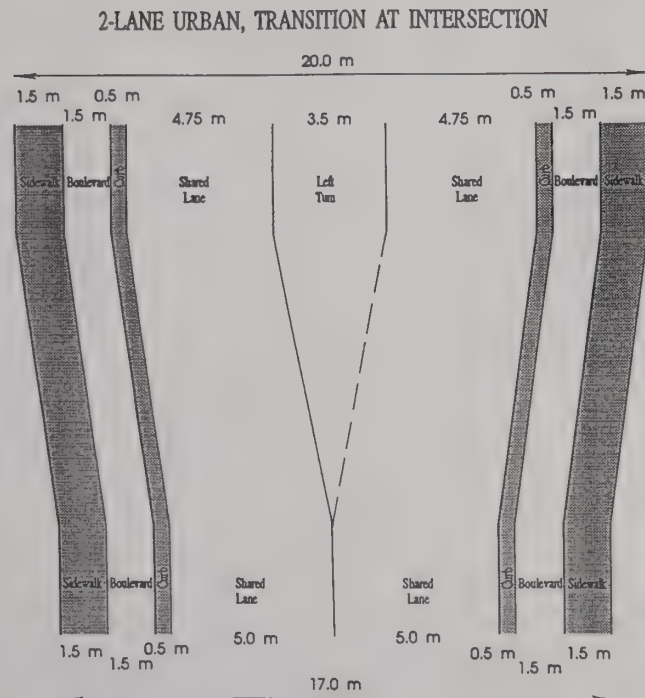
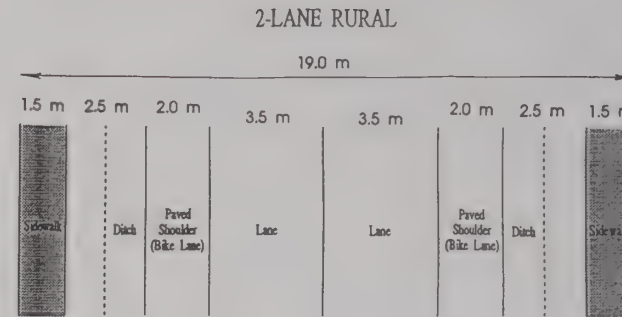
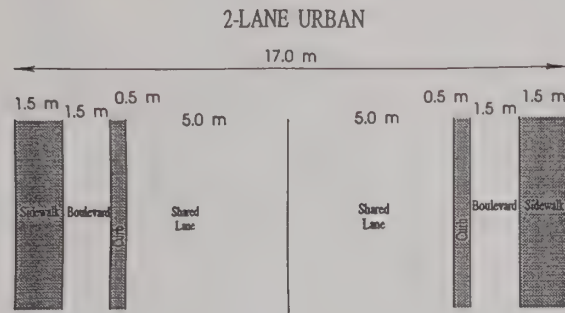


FIGURE 12
STONE CHURCH ROAD
DESIGN ALTERNATIVES
PLAN DRAWINGS

TABLE 8: Evaluation of Design Alternatives

Criteria	<u>2 Lanes Rural</u>	<u>2 Lanes Urban</u>	<u>3 Lanes Urban</u>	<u>4 Lanes Urban</u>
	- ditches - paved shoulders for cyclists - upgrade lanes to municipal standards - sidewalks	- curbs & gutters - 2 wide lanes to provide for cyclists & to allow emergency vehicles and buses to pass - sidewalks	- curbs & gutters - 2 lanes, wide enough to accommodate cyclists - one two-way left turn lane (TWLTL) - sidewalks	- curbs & gutters - 2 curb lanes wide enough to accommodate cyclists plus two through lanes - sidewalks
<u>Physical/Biological Factors:</u>				
1. Surface Water a) Is there an anticipated change in the flow to the Red Hill Creek (quantity & quality)? b) Will there be an improvement to the stormwater collection system?	a) no, some infiltration of stormwater in ditches b) yes, capacity of ditches improved	a) minor increase in quantity of untreated stormwater b) yes	a) minor increase in quantity of untreated stormwater b) yes	a) minor increase in quantity of untreated stormwater b) yes
2. Vegetation Will trees or landscaping be removed or impacted?	yes	yes	yes	yes
3. Fish & Wildlife Will fish habitat be affected in Red Hill Creek?	yes, minor culvert extension	yes, minor culvert extension	yes, minor culvert extension	yes, moderate culvert extension

* In all design alternatives, the road will be raised.

TABLE 8: Evaluation of Design Alternatives (Continued)

Criteria	<u>2 Lanes Rural</u>	<u>2 Lanes Urban</u>	<u>3 Lanes Urban</u>	<u>4 Lanes Urban</u>
	- ditches - paved shoulders for cyclists - upgrade lanes to municipal standards - sidewalks	- curbs & gutters - 2 wide lanes to provide for cyclists & to allow emergency vehicles and buses to pass - sidewalks	- curbs & gutters - 2 lanes, wide enough to accommodate cyclists - one two-way left turn lane - sidewalks	- curbs & gutters - 2 curb lanes wide enough to accommodate cyclists plus two through lanes - sidewalks
Heritage Buildings Will property be required adjacent to the Barton Stone United Church?	yes, at corner of intersection only	yes, at corner of intersection only	yes	yes
Land Uses (Existing & Proposed) a) Will existing and proposed land uses be supported? b) Will vehicular access be improved for commercial and institutional development, and senior citizen and recreation facilities?	a) no b) minor improvements	a) no b) no	a) yes, due to road upgrading and improved turning movements b) yes	a) yes, due to road upgrading and improved turning movements b) yes
Community Character a) Does the option reflect the character of the adjacent neighbourhoods: - residential? - commercial/industrial? b) Is property required outside the existing right of way?	a) yes no b) yes, for sidewalk construction in some areas	a) yes partly b) yes, for sidewalk construction in some areas	a) yes, depending on streetscaping features yes b) yes, for sidewalk construction in some areas	a) no, wider streets means less residential character yes b) yes

TABLE 8: Evaluation of Design Alternatives (Continued)

Criteria	<u>2 Lanes Rural</u>	<u>2 Lanes Urban</u>	<u>3 Lanes Urban</u>	<u>4 Lanes Urban</u>
	- ditches - paved shoulders for cyclists - upgrade lanes to municipal standards - sidewalks	- curbs & gutters - 2 wide lanes to provide for cyclists & to allow emergency vehicles and buses to pass - sidewalks	- curbs & gutters - 2 lanes, wide enough to accommodate cyclists - one two-way left turn lane (TWLTL) - sidewalks	- curbs & gutters - 2 curb lanes wide enough to accommodate cyclists plus two through lanes - sidewalks
Transportation Facilities & Traffic Operations				
a) Will traffic volumes be reduced?*	a) no extra capacity, improved lane may attract more vehicles	a) no extra capacity, improved lane may attract more vehicles	a) minor extra capacity due to TWLTL, but improved lane widths & TWLTL may attract more vehicles	a) extra capacity due to doubling number of lanes; may encourage more vehicles
b) Will accident rates be reduced?	b) no change anticipated	b) no change anticipated	b) yes	b) yes
c) Will the road be capable of handling increased transit service?	c) yes, minor increase in capability	c) yes, wider lanes for buses	c) yes, wider lanes for buses	c) yes, wider lanes for buses and extra lane for passing vehicles
d) Will the safety of pedestrians be increased?	d) yes, sidewalks, with pedestrian crossing of intersections improved	d) yes, sidewalks, with pedestrian crossing of intersections improved; no, wider lanes to cross	d) yes, sidewalks, with pedestrian crossing of intersections improved; no, wider lanes to cross but TWLTL for pedestrian crossing	d) yes, sidewalks, with pedestrian crossing of intersections improved; no, wider street to cross and more lanes to cross
e) Will safety of cyclists be increased?	e) yes, paved shoulders	e) yes, wider curb lane	e) yes, wider curb lane	e) yes, wider curb lane
Maintenance of Road Drainage System				
Will maintenance costs be reduced?	no	yes, maintenance of catch basins only	yes, maintenance of catch basins only	yes, maintenance of catch basins only

* The Red Hill Creek Expressway is anticipated to result in reduced traffic volumes on Stone Church Road (see sec. 3.5.2).

- **The proposal stays within the 66 foot right of way wherever possible.**
This is possible except where it may also be necessary to acquire additional property for sidewalk construction and landscaping.
- **Tree preservation should be incorporated into the design and the public should have input into this initiative.**
The Region has retained a landscape architect to develop a tree preservation plan and a streetscaping plan to enhance the character of the road. Public consultation is part of this project.
- **No increase in traffic volume should be accommodated.**
A regional road to the south (Rymal Road) is scheduled for widening to accommodate any additional traffic volumes and its function will be to take a higher volume of traffic than Stone Church Road. In addition, the Red Hill Creek Expressway is located to the north. Therefore, it is not anticipated that this road will require further widening in the foreseeable future.
- **Educate the public about bike lanes and two way centre left turn lanes.**
The Region is developing a Citizen's Guide to be inserted in the Hamilton Spectator twice per year. These kinds of issues can be explained in that Guide. In addition, the Region through consultation on road projects, educates the public about these issues.
- **Provide pedestrian crossings more frequently than only at major intersections.**
The Roads Department is examining how to provide safe pedestrian crossings between major intersections.

The Region also evaluated the design alternatives and reached the same conclusion as the public.

4.2.5 Confirmation of Selected Design

As requested at the workshop, the Region held another set of public information centres to show the preferred 3 lane road design and the potential impacts on trees and property. A questionnaire and comment sheet asked the participants to comment on each aspect of the road design. Overall, there was agreement with the design as it was shown. Additional comments were received on trees and landscaping for individual properties. See Appendix D for all comments received in Phase III.

5.0 DESCRIPTION OF SELECTED DESIGN

- 5.1 The Selected Design
- 5.2 Preliminary Design Criteria
- 5.3 Cross-section
- 5.4 Drainage
- 5.5 Sidewalk Location and Streetscaping
- 5.6 Traffic control Devices
- 5.7 Illumination
- 5.8 Project Staging
- 5.9 Approvals
- 5.10 Construction
- 5.11 Environmental Commitments

5.0 DESCRIPTION OF SELECTED DESIGN

This section provides a detailed description of the selected design including refinements of the selected design alternative following the workshop and the second round of public information centres.

5.1 The Selected Design

Roadway design is controlled by topography, development, characteristics of the vehicles using the road, traffic volume, speed and composition, roadway and roadside features, and social factors. In selecting the dimensions of the roadway elements and construction materials and techniques, the effect of the preferred design on each of the above mentioned controls should be evaluated.

In this particular project, the extent and type of development (both existing and proposed) varies along the length of Stone Church Road. The selected design takes into consideration the differing characteristics and land uses. The features of the selected design are shown on the proposed plan, Figure 13, Sheets 1-21. The following describes the features of the road for each area:

Garth Street to Upper Gage Avenue, Upper Ottawa Street to Dartnall Road, and Anchor Road to Pritchard Road

- three lane cross section comprised of two 4.75 m wide lanes (one for each direction of travel) that will be shared by cyclists and drivers, and a 3.5 m centre two way left turn lane;
- exclusive left turn lanes at signalized intersections;
- signalization of the Upper Sherman Avenue and Redmond/Ridgemount Drive intersections and Nebo Road and Dartnall Road;
- median islands and right turn lanes on Stone Church Road at the intersections of Upper James Street, Upper Wentworth Street and Upper Gage Avenue;
- improvements to the vertical profile of the road along with the construction of curbs, gutters and storm sewers to improve drainage; and,
- provision of sidewalks subject to City of Hamilton approval and funding.

Upper Gage Avenue to Upper Ottawa Street

- This section has recently been reconstructed and does not require any further work.

Dartnall Road to Anchor Road

- a two lane cross section comprised of two 4.75 m wide lanes (one for each direction of travel) that will be shared by cyclists and drivers;
- an exclusive left turn lane for westbound to southbound traffic at Dartnall and Anchor Roads;

- raising the road approximately 2.5 - 3 m in the vicinity of Dartnall Road to accommodate a stormwater management pond on the north side of the roadway that is associated with the Red Hill Creek Expressway construction;
- improvements to the vertical profile of the road along with the construction of curbs, gutters and storm sewers to improve drainage; and,
- provision of sidewalks subject to City of Hamilton approval.

Pritchard Road to Upper Mount Albion Road

- a two lane cross section comprised of two 3.5 m wide lanes (one for each direction of travel);
- 2.0 m wide paved shoulders suitable for use by cyclists; and,
- improvements to the vertical profile of the road along with improvements to the roadside ditches to assist drainage.

5.2 Preliminary Design Criteria

The first step in roadway design, after the roadway classification has been determined, is to select a design speed for the roadway. The design speed is the maximum safe speed that can be attained on a roadway when weather and traffic conditions are favourable, and the only control on speed is the physical features of the roadway.

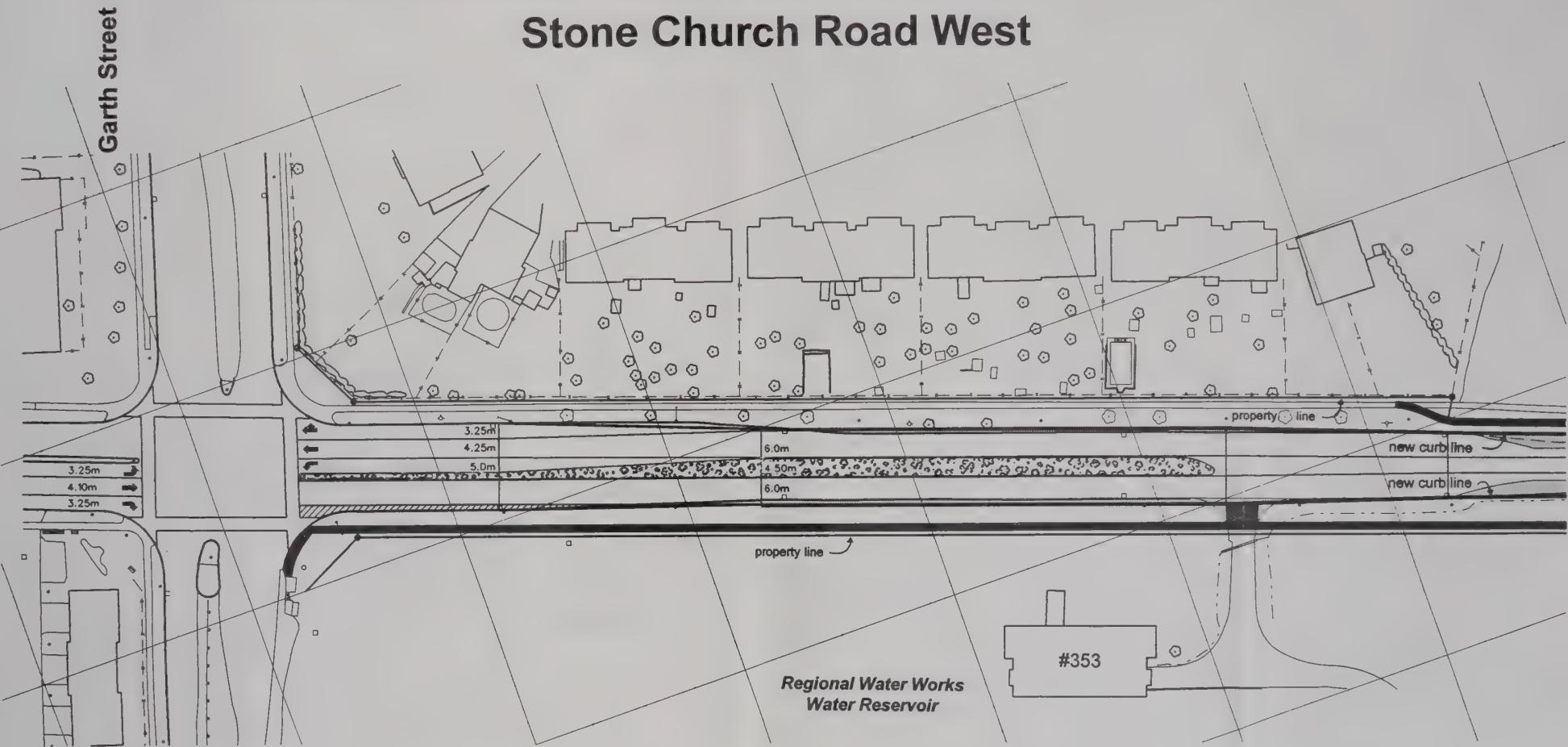
A design speed should be consistent with the speed that drivers 'sense' they can travel based on only visual observations of the roadway, the topography and the adjacent land use. On arterial roadways it is generally desirable to provide as high a design speed as possible to satisfy the 'mobility' function of the roadway. However, the selected design speed should also be tempered by the constraints of adjacent land uses, pedestrian and cyclist requirements, economics, social impacts and environmental quality. Once a design speed is selected all of the features of the roadway are related to the design speed in order to provide a consistent, safe and balanced design.

Given the classification of Stone Church Road as a minor arterial with mixed residential, commercial and industrial land uses a design speed of 60 km/h was selected.

The posted or statutory speed limit of the roadway is a traffic operations consideration, but is strongly influenced by the design speed. Speed limits are the maximum speed that a driver can legally travel on a particular roadway. Speed limits are generally set below the design speed on the basis that the design will provide a measure of latitude for drivers exceeding the speed limit.

Stone Church Road, as with almost all roads in the urban area of Hamilton, will continue to have a speed limit of 50 km/h.

Stone Church Road West



LOCATION
MAP



Legend

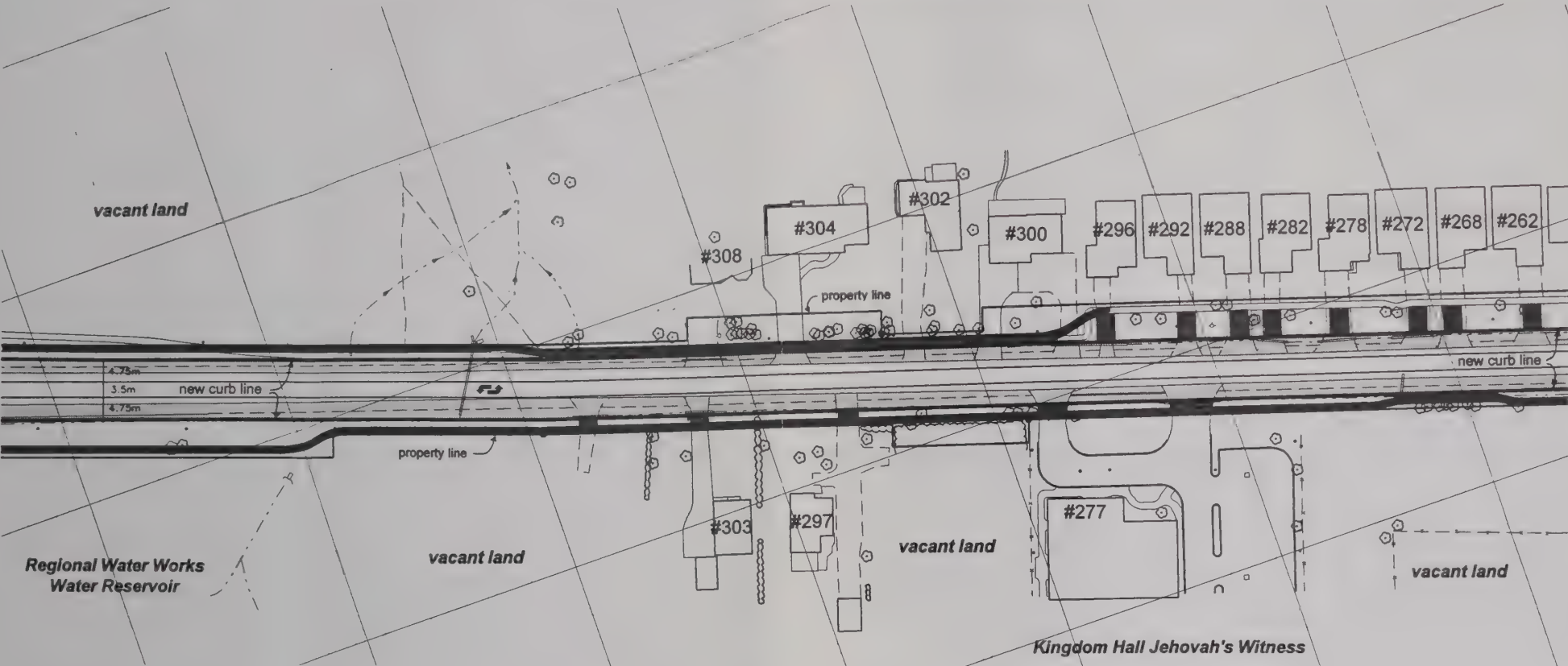
- Proposed road widening
- Concrete sidewalk & driveway approach
- Traffic island or median

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

SCALE 1:1000

Stone Church Road West



LOCATION
MAP



Legend

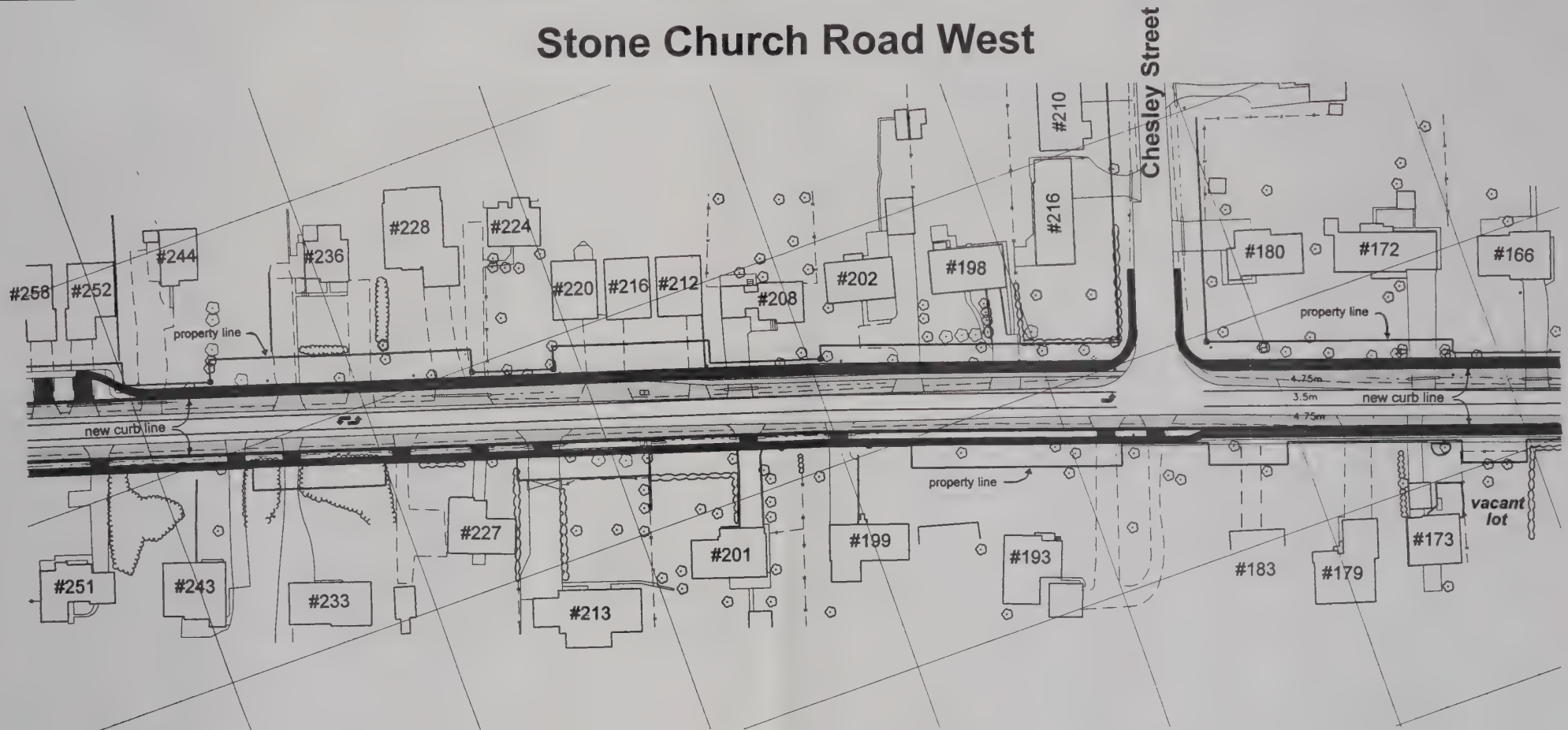
- Proposed road widening
- Concrete sidewalk & driveway approach

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

**FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION**

SCALE 1:1000

Stone Church Road West



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach

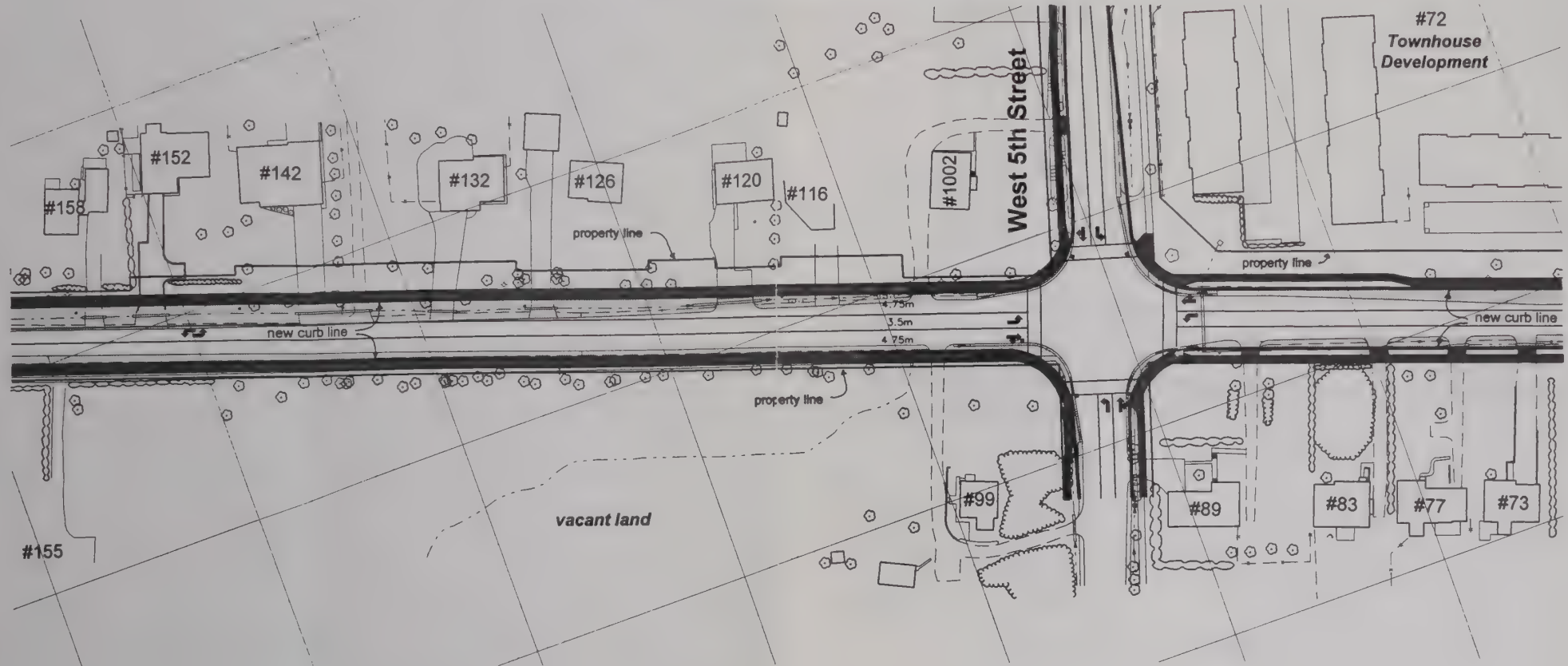
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

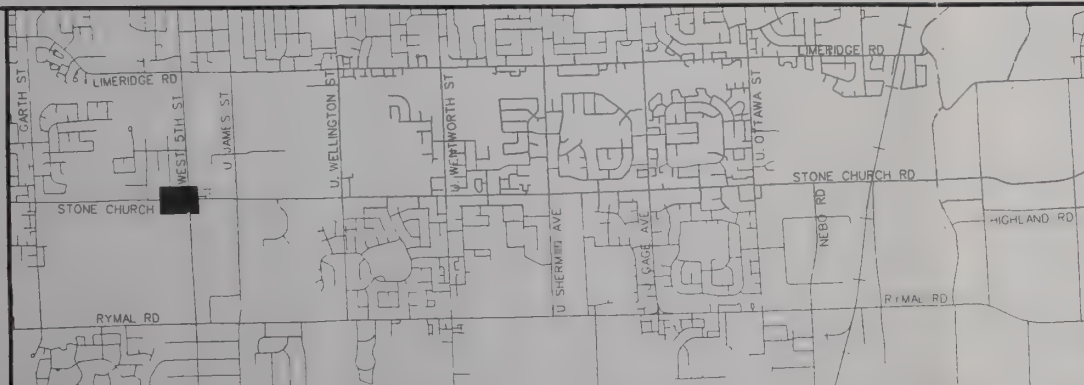
SCALE 1:1000

SHEET 3 of 21

Stone Church Road West



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach

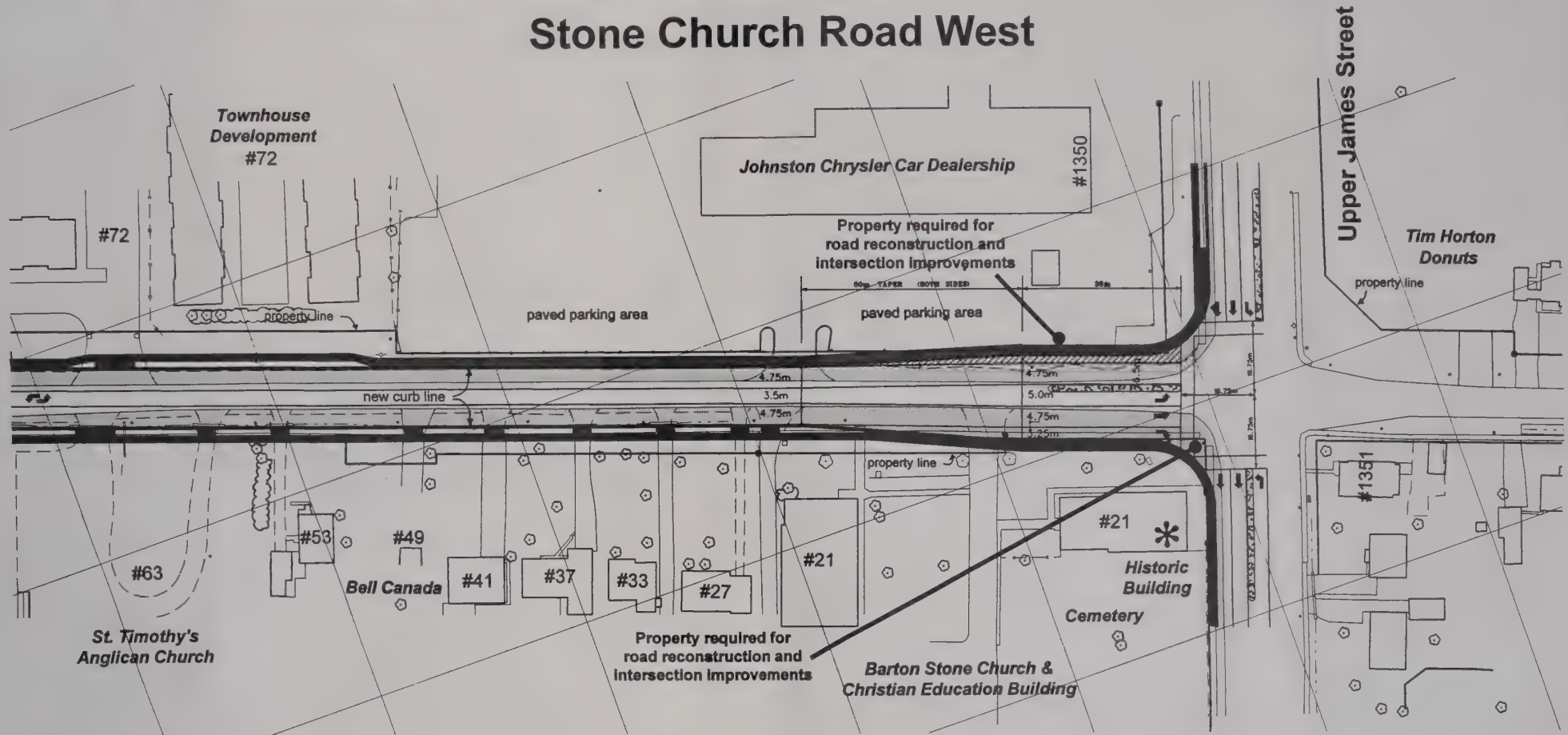
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

SCALE 1:1000

SHEET 4 of 21

Stone Church Road West



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach
- Traffic island or median

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

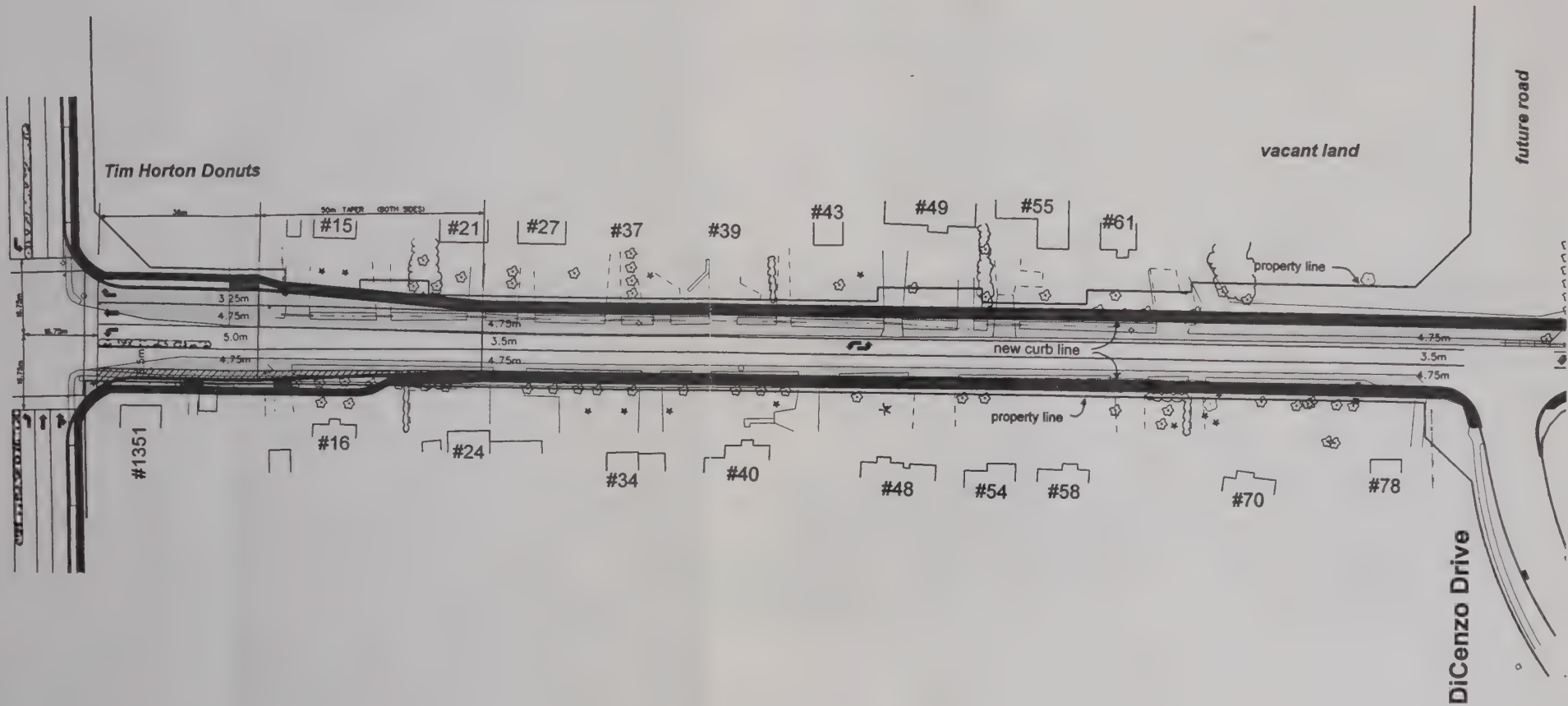
FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

SCALE 1:1000

SHEET 5 of 21

Stone Church Road East

Upper James Street



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach
- Traffic island or median

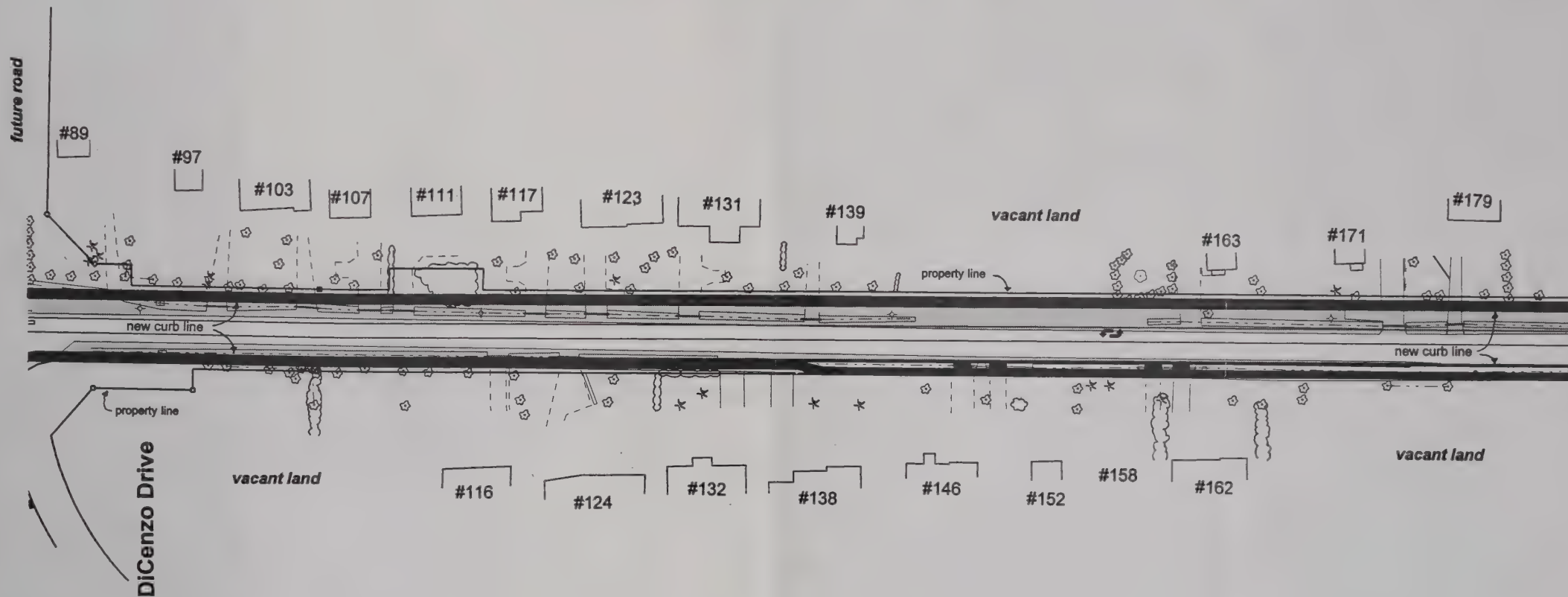
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

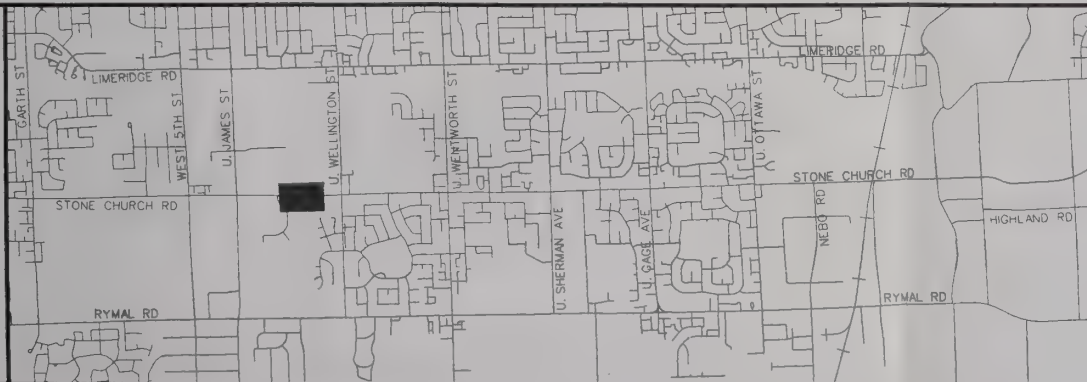
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SHEET 6 of 21

Stone Church Road East



LOCATION
MAP



Legend

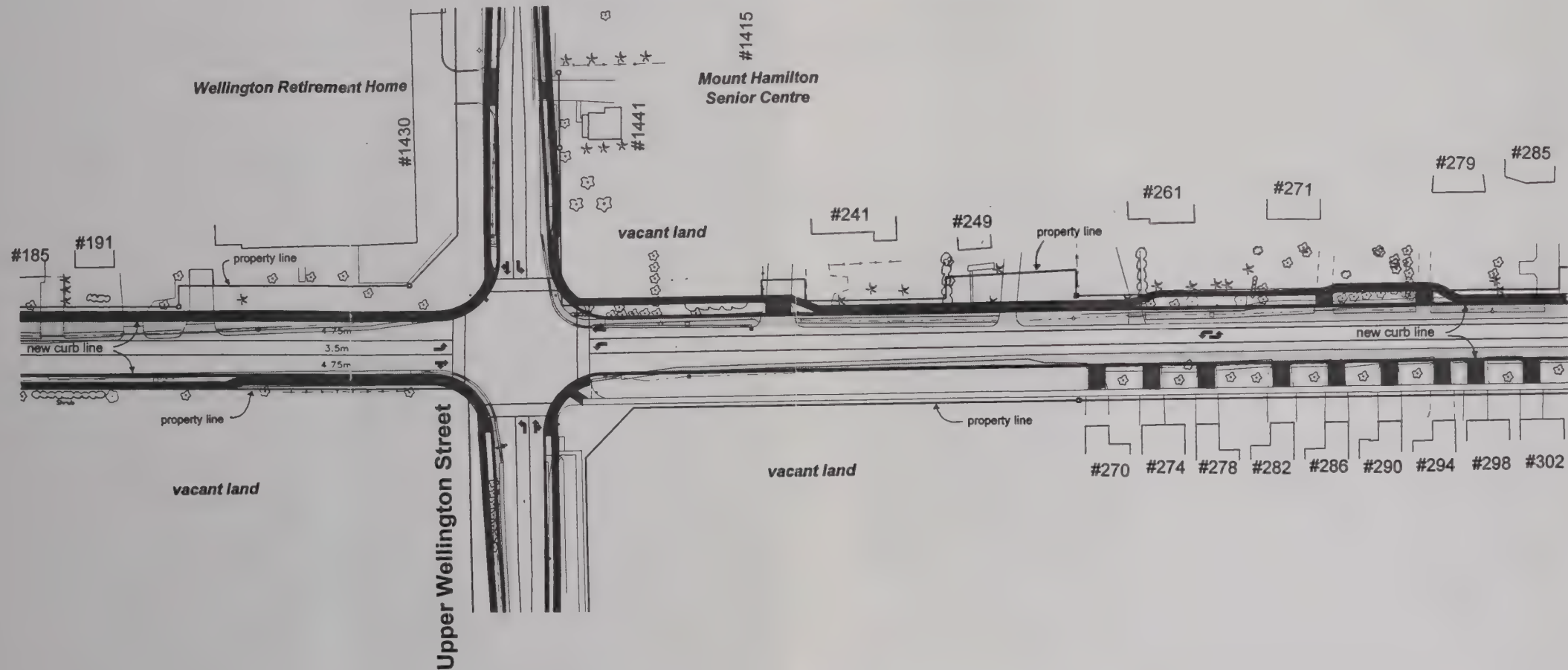
- Proposed road widening
- Concrete sidewalk & driveway approach

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

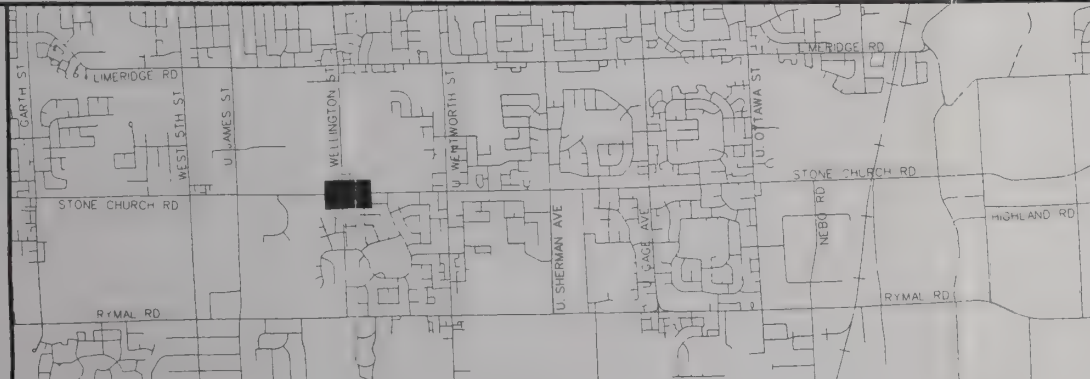
FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



Legend

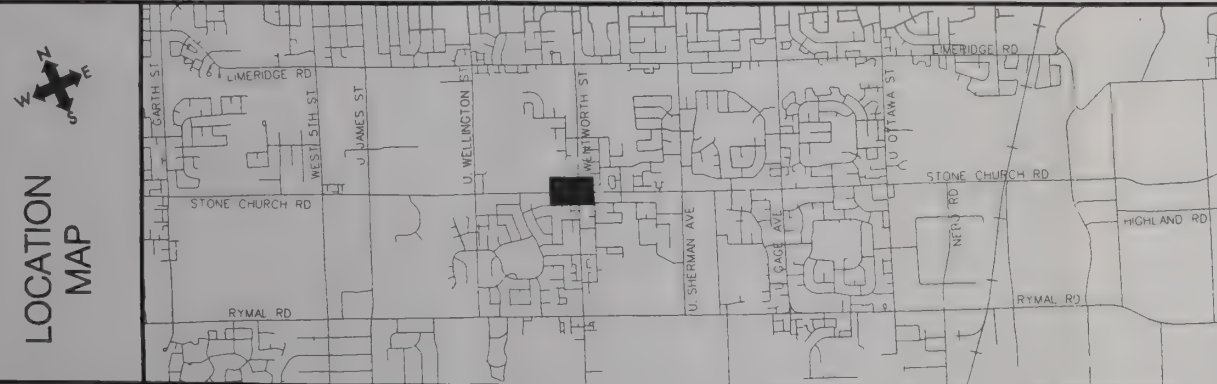
- Proposed road widening
- Concrete sidewalk & driveway approach

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION

SCALE 1:1000

Stone Church Road East



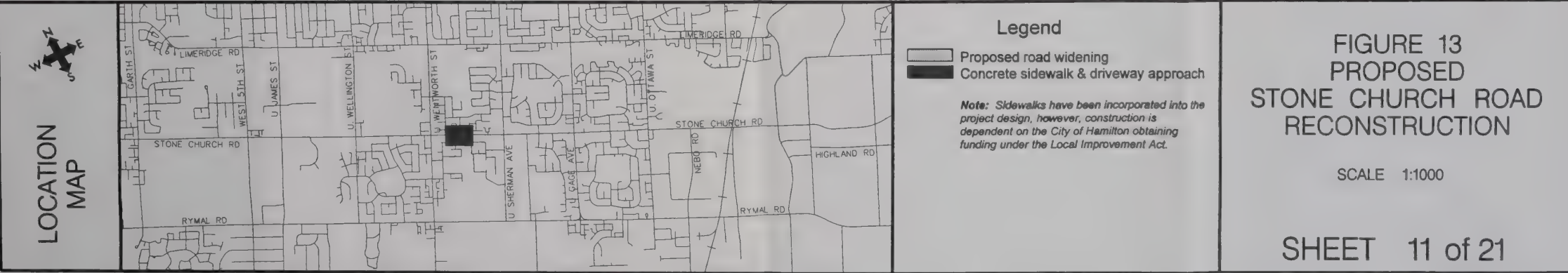
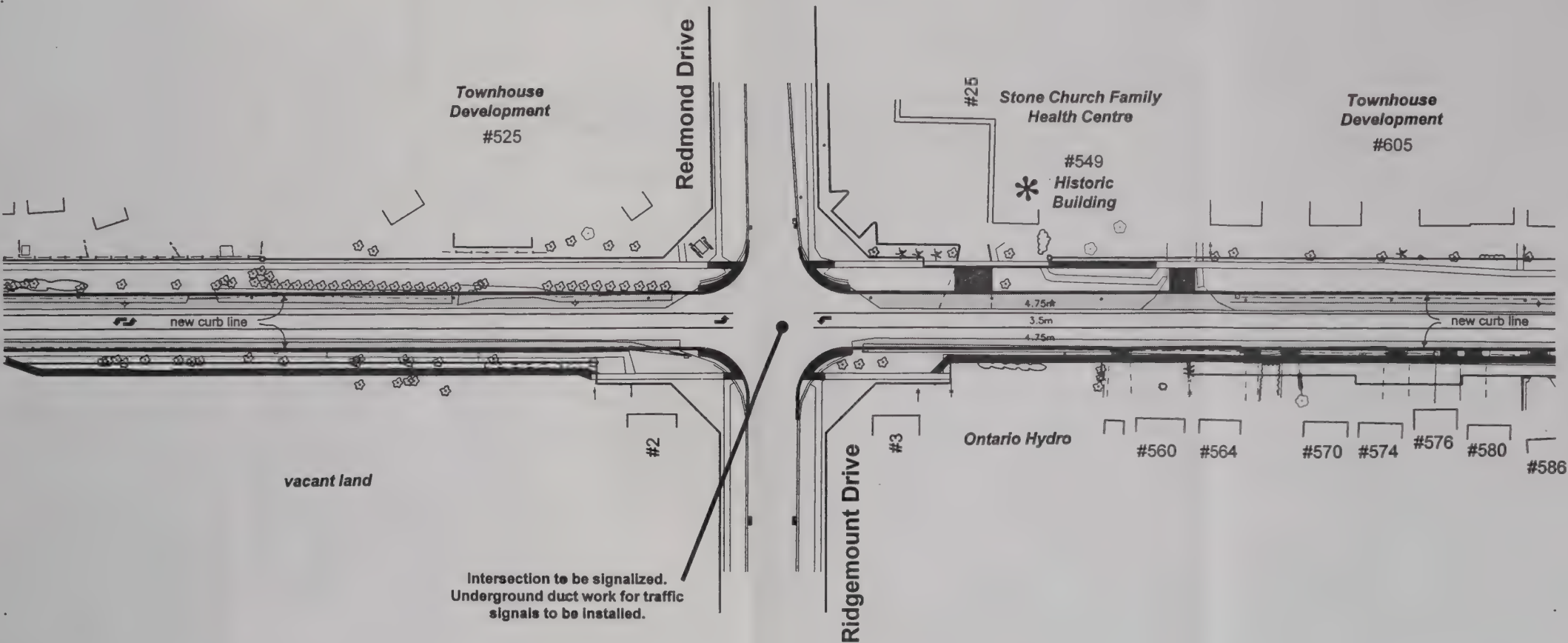
- Legend**
- Proposed road widening
 - Concrete sidewalk & driveway approach
 - Traffic island or median

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

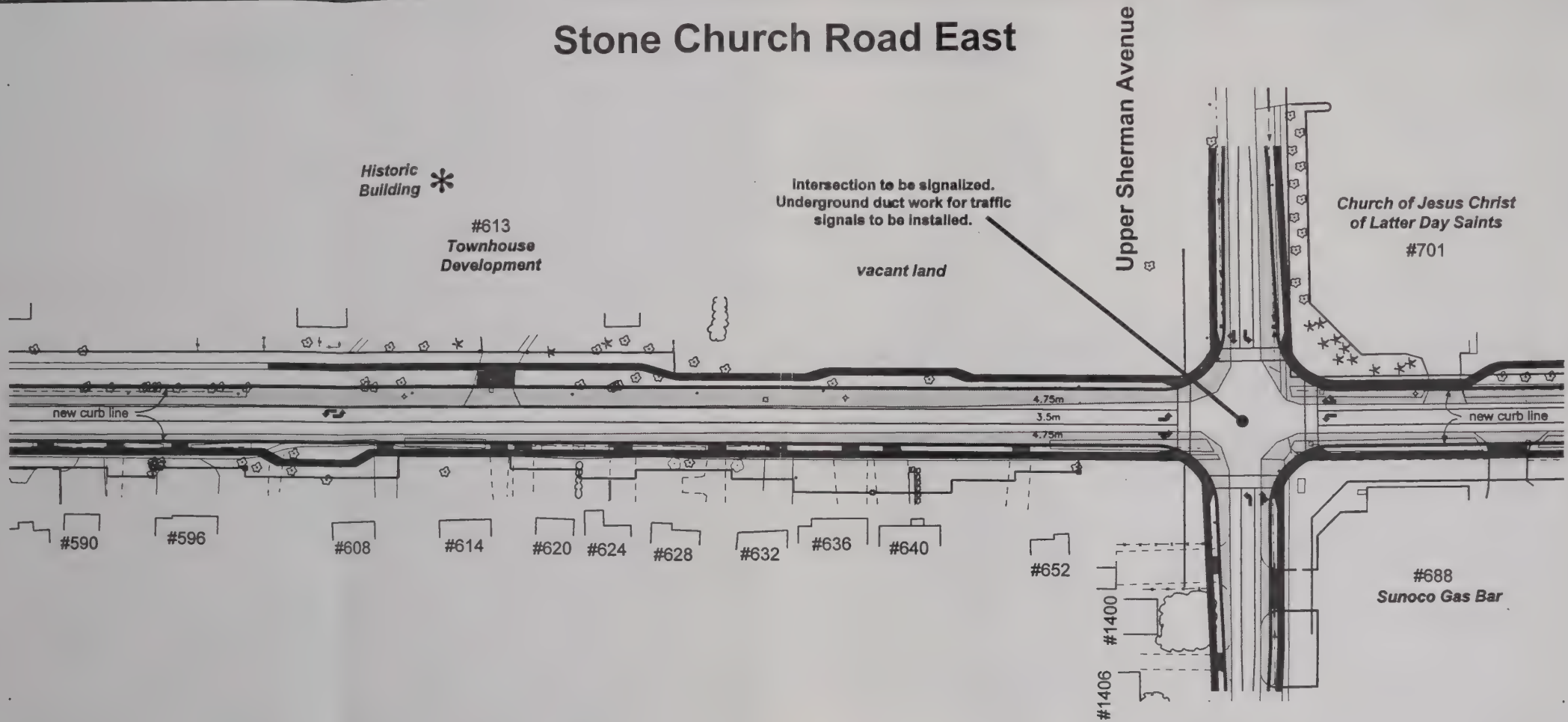
**FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION**

SCALE 1:1000

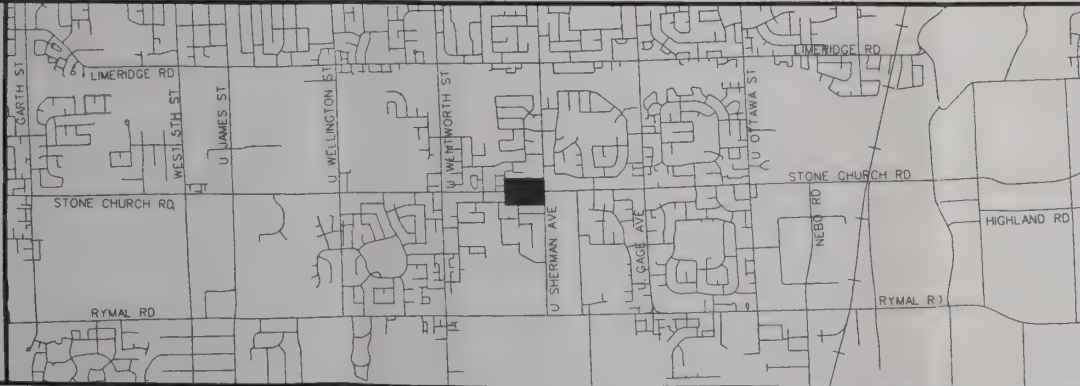
Stone Church Road East



Stone Church Road East



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach

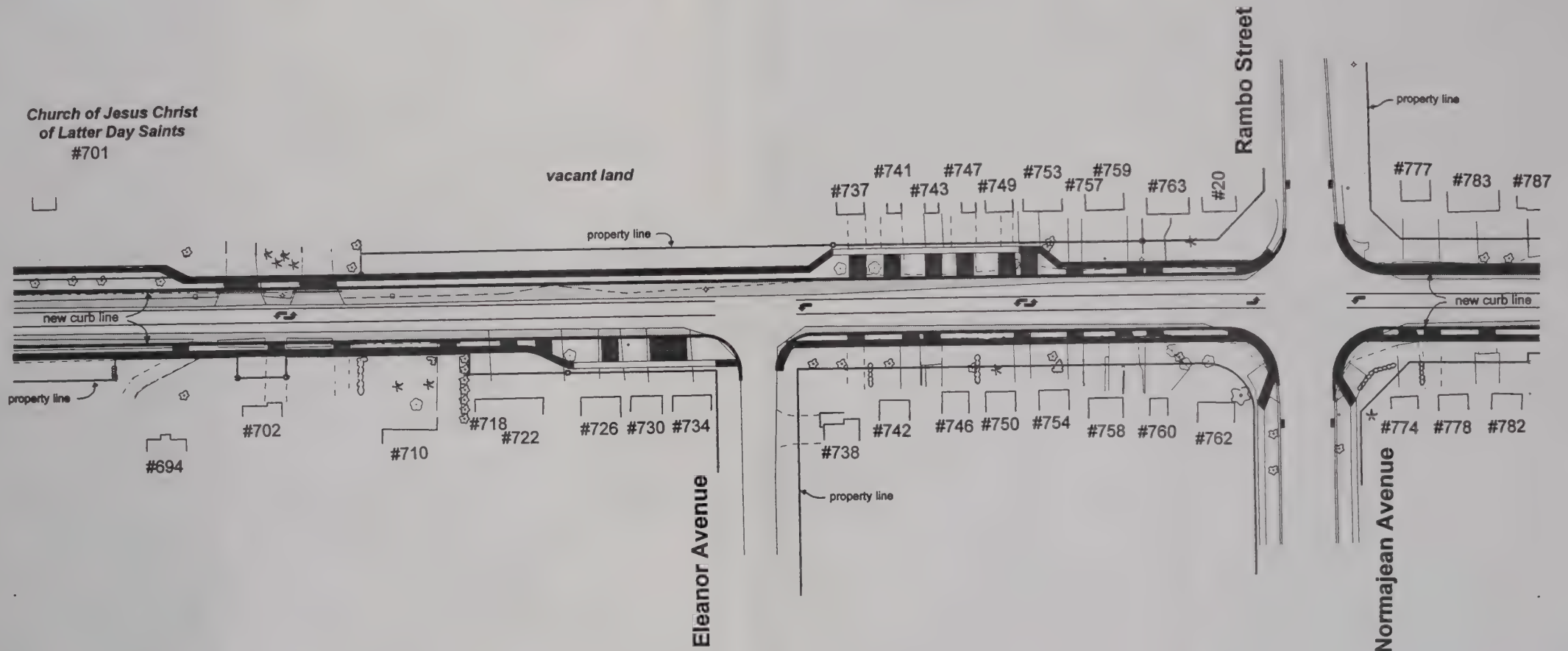
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

**FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION**

SCALE 1:1000

SHEET 12 of 21

Stone Church Road East



LOCATION
MAP



Legend

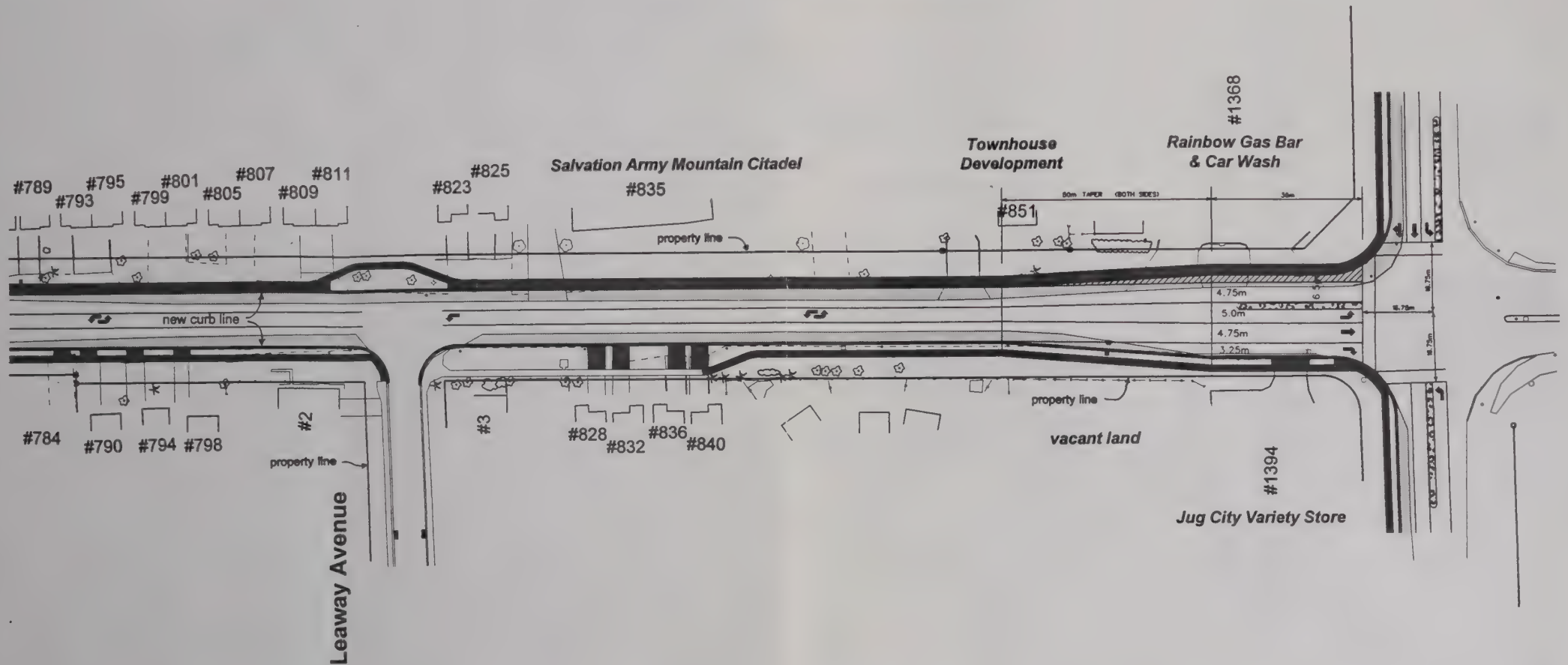
- Proposed road widening
- Concrete sidewalk & driveway approach

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

**FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION**

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach
- Traffic island or median

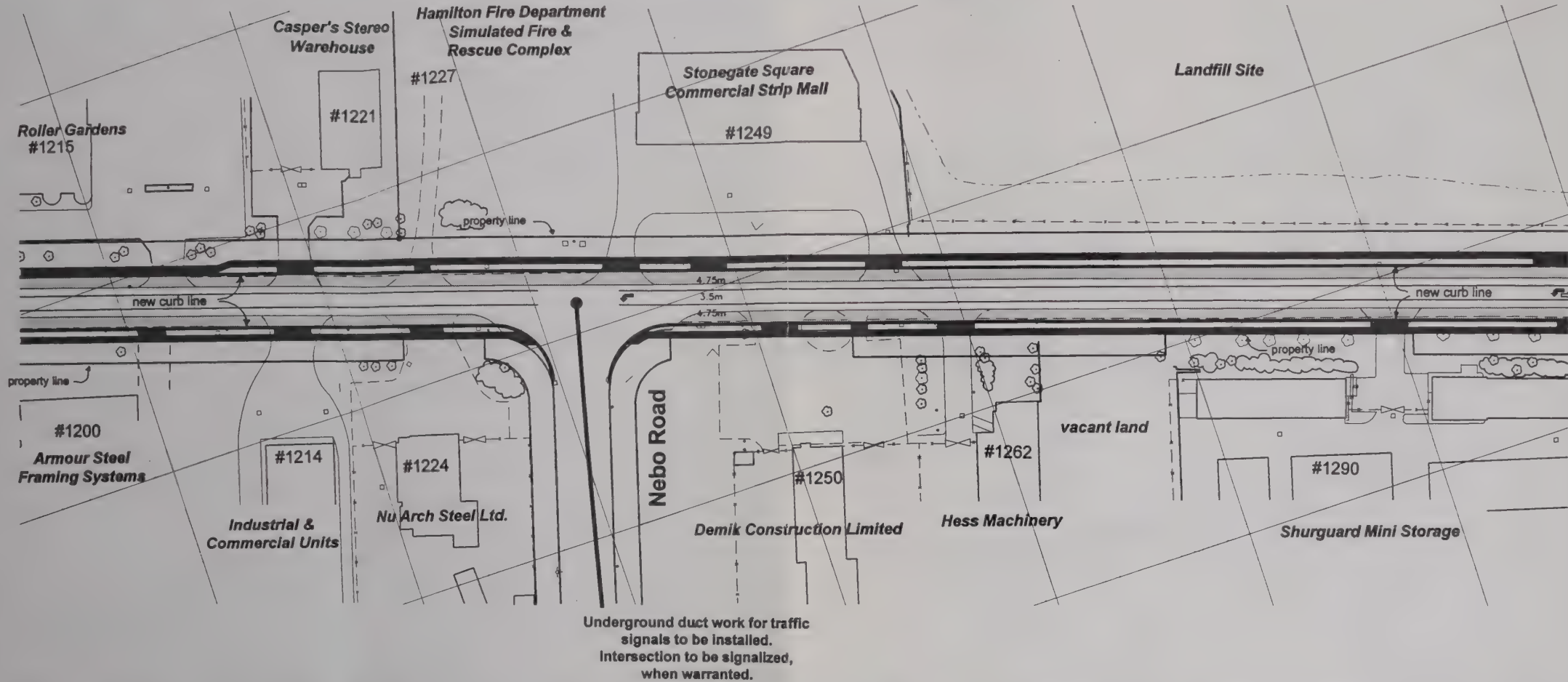
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

SCALE 1:1000

SHEET 14 of 21

Stone Church Road East



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach

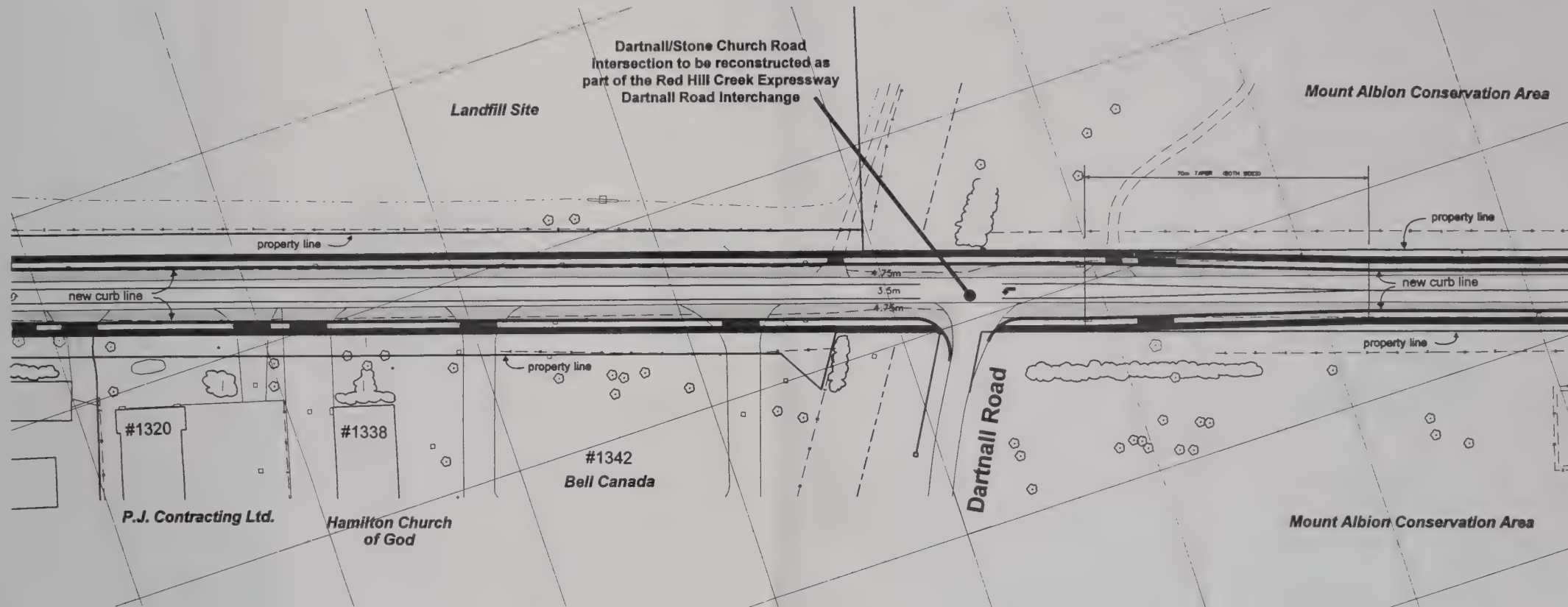
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

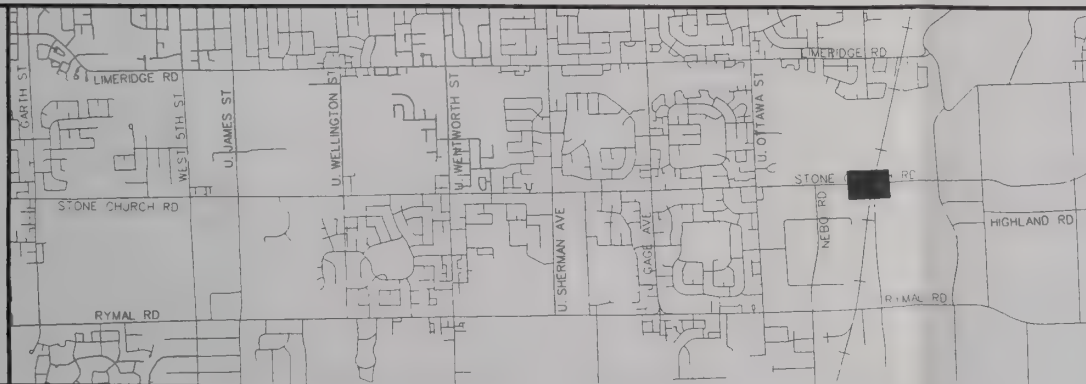
SCALE 1:1000

SHEET 16 of 21

Stone Church Road East



LOCATION
MAP



Legend

- Proposed road widening
- Concrete sidewalk & driveway approach

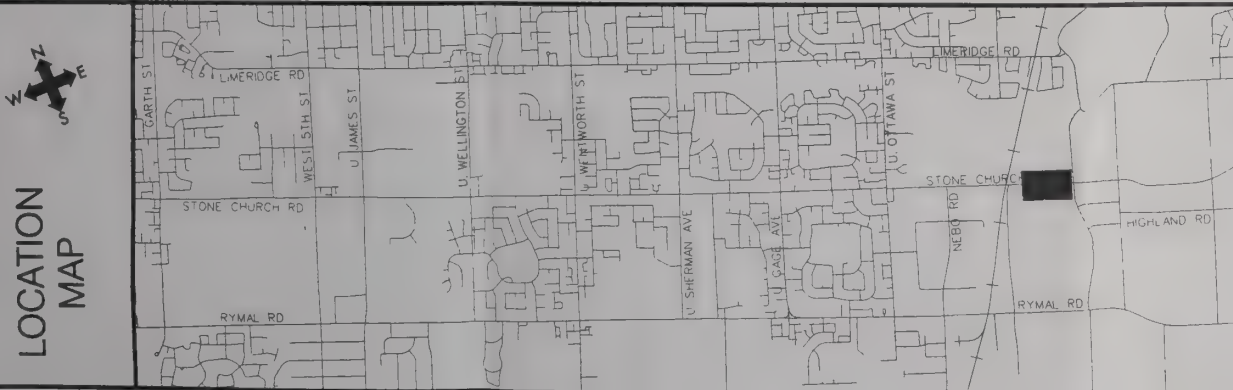
Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

SCALE 1:1000

SHEET 17 of 21

Stone Church Road East



Legend

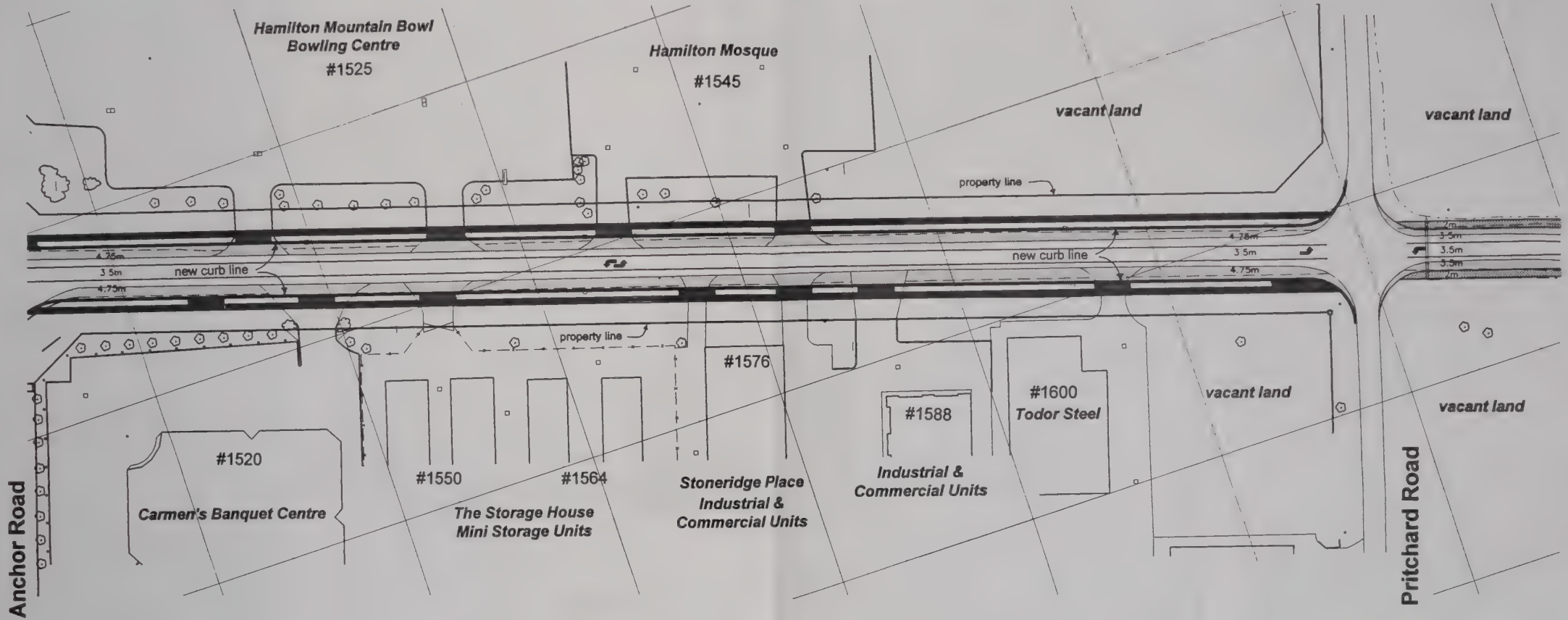
- Proposed road widening
- Concrete sidewalk & driveway approach
- Painted Stripe

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

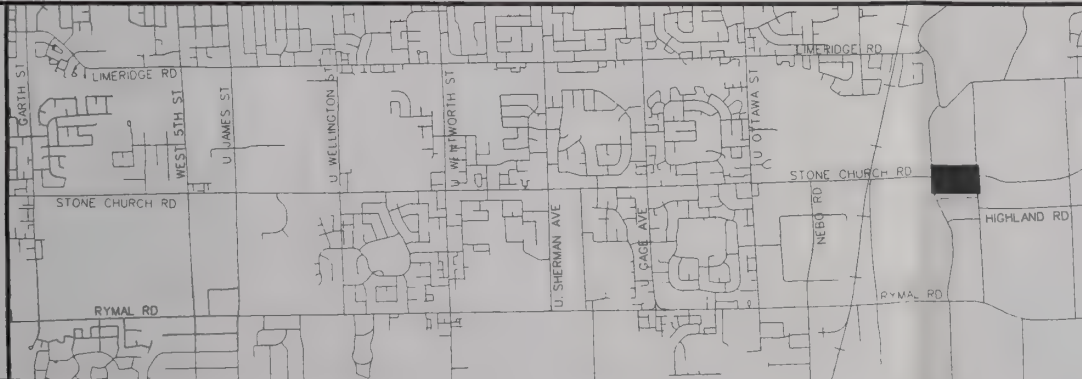
**FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION**

SCALE 1:1000

Stone Church Road East



LOCATION MAP



Legend

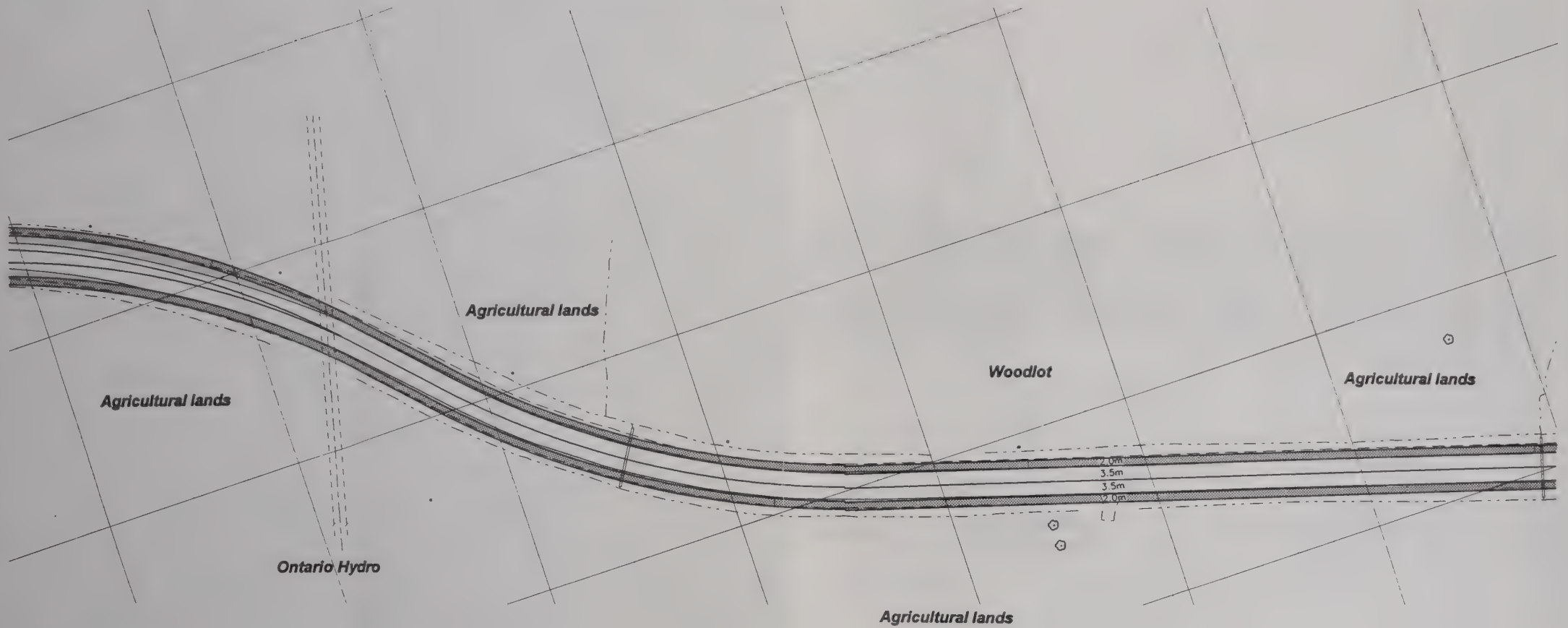
-  Proposed road widening
 Concrete sidewalk & driveway approach
 Gravel Shoulder

Note: Sidewalks have been incorporated into the project design, however, construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act.

FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION

SCALE 1:1000

Stone Church Road East



LOCATION MAP



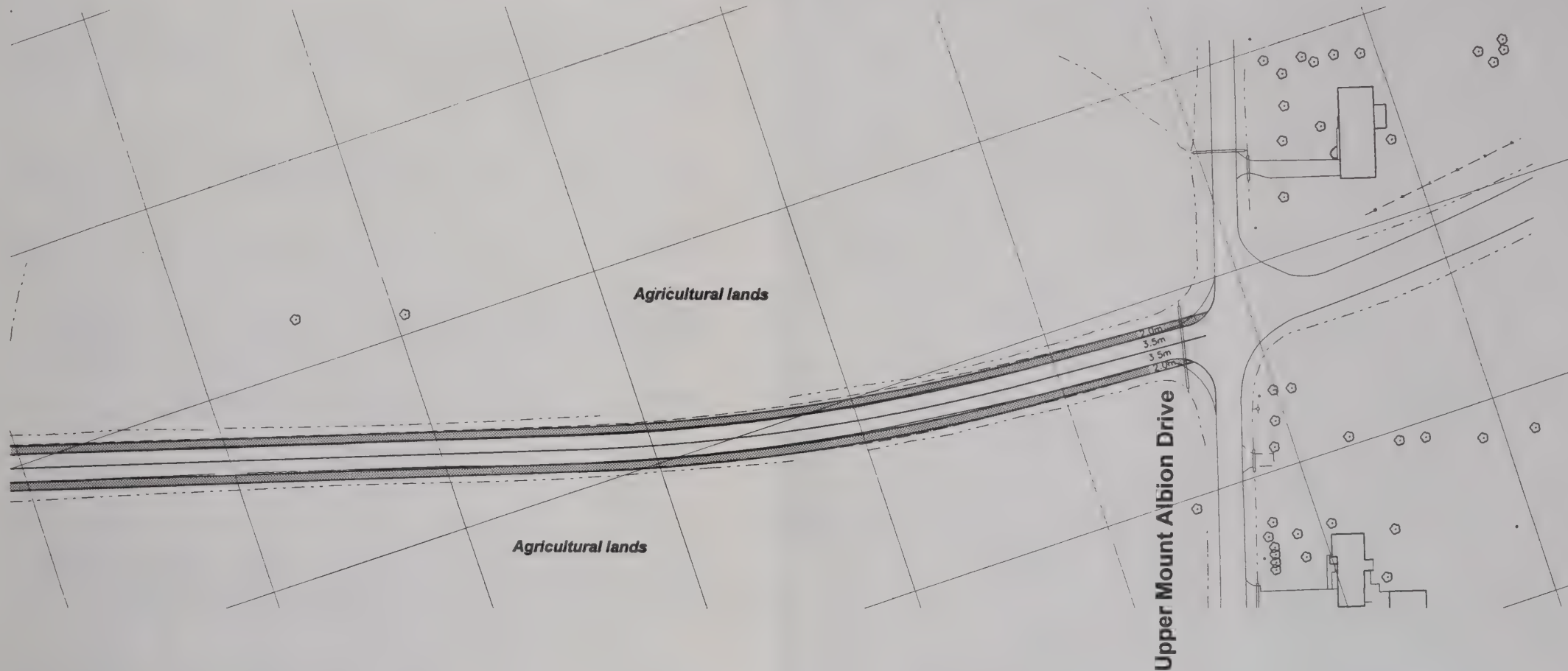
Legend

-  Proposed road widening
 Gravel Shoulder

FIGURE 13
PROPOSED
STONE CHURCH ROAD
RECONSTRUCTION

SCALE 1:1000

Stone Church Road East



LOCATION
MAP



Legend

-  Proposed road widening
-  Gravel Shoulder

FIGURE 13 PROPOSED STONE CHURCH ROAD RECONSTRUCTION

SCALE 1:1000

SHEET 21 of 21

5.3 Cross-section

For safety and convenience, wide traffic lanes, ample shoulders and gently sloping unobstructed road sides are desirable as they add forgiving qualities for minor driver errors and promote ease of operation. Factors that determine the elements and dimensions of the cross section are: composition and volume of all modes of traffic, topography, safety, aesthetics, impact on the environment, maintenance procedures, and construction practices.

Figure 14 shows the cross section for the selected alternative. The actual width of the pavement varies from 9.5 m to 13.0 m along the length of the road. Widths of more than 13.0 m occur at some intersections because of additional turn lanes. The dimensions of the lanes and shoulders that make up the paved surface are as follows:

The Region did not examine the option of providing a bike path between the sidewalk and the road as this is considered to have unacceptable safety hazards due to the number of driveway entrances along Stone Church Road.

- Through traffic lanes that are intended to be shared by vehicles and bicycles will be 4.75 m wide. Lanes that are used by drivers only are 3.5 m wide and will be associated with 2.0 m wide paved shoulders for cyclists. In order to minimize the width of the paved surfaces, the two-way left turning lanes will be 3.5 m wide (which is significantly less than the Regional standard of 5.0 m two-way left turning lanes).
- The desired boulevard width is 3.0 m including a 1.5 m sidewalk. Where the sidewalk is adjacent to the road (i.e. no boulevard) the sidewalk width is 2.0 m..
- The proposed road design will be accommodated within the existing right-of-way, which is for the most part, a 66 ft. road right-of-way.

5.4 Drainage

Stormwater runoff will be collected by catchbasins, with the specific locations to be determined during detailed design. Trunk sewers and catch basins are in place to receive this runoff however more catchbasins and possibly new local collector sewers may be required. In general the road right-of-way will drain toward the gutters or road side ditches. In cases where this is not possible or where existing local swales carry water toward the road, ditch-inlets will be installed to intercept and collect this water.

Subgrade drainage will be handled by a subdrain system installed under and behind the curb and connected directly into the catchbasin system.

Existing mixed gravel and asphalt shoulders are being replaced by a paved urban section. Current runoff flows over gravel shoulders and along bare ditches to an intermittently spaced series of catchbasins. Due to the compacted condition of the shoulders and the observed duration for which water sits in road side ditches it is assumed that little if any infiltration is taking place. The increase in stormwater runoff as a result of this project is expected to be nominal and trunk sewers have been sized to accept this increased flow.

All catchbasins will have sumps and goss traps to trap sediments and suspended particulates. These sediments in the goss traps and sumps are removed during routine maintenance. It is anticipated the long term soil erosion and resultant sediment runoff will be reduced by the proposed construction.

5.5 Sidewalk Location and Streetscaping

As previously discussed in Section 4, sidewalk construction is funded by the City of Hamilton through the Local Improvement Act. Therefore, sidewalk construction and road construction are sometimes carried out independently. However, in order to ensure that the entire road right of way is constructed in a coordinated and cost efficient way, and in order to determine the full impact of construction, sidewalks are planned to be constructed at the same time as the road. This is dependent on the City obtaining funding under the Local Improvement Act

Carefully locating sidewalks in the right-of-way will minimize the impacts to vegetation. In order to protect significant healthy trees a nonstandard sidewalk location must be considered. The Region will be preparing a streetscaping plan which includes identification of significant vegetation, as well as a proposed sidewalk location plan and tree replanting scheme. Details of proposed tree removal, sidewalk location and tree planting schemes will be presented to and discussed with the public before implementation.

5.6 Traffic Control Devices

Traffic signals will be installed at Upper Sherman Avenue and Redmond/Ridgemount Drive and provision for future signals will be installed at Nebo and Dartnall Roads.

The existing traffic control systems including the signal heads, poles and associated underground work, will have to be relocated at West Fifth Street, Upper James Avenue, Upper Wellington Street, Upper Wentworth Street and Upper Gage Avenue to allow for the widening of Stone Church Road.

Only minor modifications to traffic control signals are anticipated at Upper Ottawa St. and no modifications are planned for the Garth Street intersection.

Pavement markings (i.e. line painting) will reflect the selected design option and will be carried out in accordance with accepted National and Provincial standards.

There are no significant changes expected in terms of traffic signs. Traffic signs will be evaluated during construction and faded, missing or unsuitable signs will be replaced at that time.

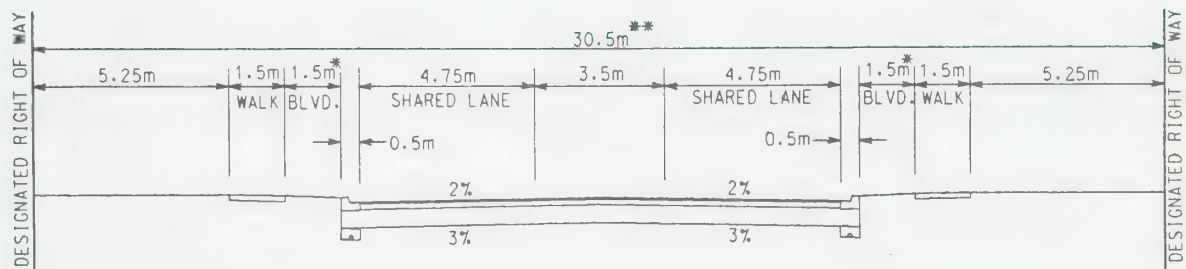
5.7 Illumination

The existing poles and luminaires located along Stone Church Road will be upgraded to current standards and policies for arterial roadways. The exact illumination requirements will be determined during detailed design.

5.8 Project Staging

The construction staging for the recommended improvements is subject to Regional priorities and funding availability. As of January 1, 1995 the proposed 1995-2000 Construction budget identifies the following program of works;

1995	Upper Gage Avenue to Upper Wentworth Street
1996	Upper Wentworth Street to Upper Wellington Street
1997	Upper Ottawa Street to Arbour Road
2000	Upper Wellington Street to Garth Street (James Street intersection under review)



3-LANE URBAN SELECTED ALTERNATIVE

*PREFERRED BOULEVARD WIDTH

**EXISTING ROAD ALLOWANCE
VARIES ALONG THE LENGTH
OF THE ROAD

SCALE 1:200

FIGURE 14
STONE CHURCH ROAD
SELECTED ALTERNATIVE

The individual contracts will be sequenced to maintain traffic flow and minimize disruption. Where there are existing wide shoulders traffic may be maintained during construction. However to minimize impacts on adjacent vegetation and to keep construction within the existing 66' (20 m) right-of-way it will be necessary to close the road, in most locations, to through traffic in order to construct the proposed road improvements.

5.9 Approvals

This project will require the following approvals:

- permit from the Hamilton Region Conservation Area for fill and construction in a floodplain and altering grades (Mount Albion Conservation Area)
- permit from Niagara Escarpment Commission for development in the Mount Albion Conservation Area
- permit for crossing Trans Northern Pipe Line

5.10 Construction

This road will be constructed over a five year period. The following is a description of the 1995 construction operating schedule for the section between Upper Gage Avenue and Upper Wentworth Street.

5.10.1 Implementation

Hours of Work

Construction generally starts at 7:00 a.m., and can run as late as 7:00 p.m.. However, if watermain work is required and water must be shut off, it may be necessary to do this at night to minimize disruption to homeowners.

Duration of Construction

This contract will take approximately five months. It will start in June and should be completed by the end of October or early November. The timing of construction is subject to changes if poor weather or other constraints are experienced.

Timing Constraints

There are no major timing constraints on this project, however, in general, contracts do not start before April 15th of any year. Concrete should not be poured after November 15th of any year.

Urgency of Works

The Upper Sherman Avenue intersection has been identified as a priority for reconstruction and signalization. Watermains are being constructed in this area and are being coordinated with the road work.

5.10.2 Waste Management and Nuisance Control

Disposal of Waste Material

The contractor is responsible for disposal of excess material in an appropriate location. This could either be a recycling facility or a licensed disposal site. The Region requires that the contractor submit a letter from the disposal site authorizing the disposal.

Control of Dust and Noise

Construction dust will be controlled through contract specifications requiring the use of calcium chloride or water on site. Equipment noise is also controlled through contract specifications and municipal noise by-laws.

5.11 Environmental Commitments

Table 9 summarizes the environmental commitments made during the planning for this project that will be carried out during detail design and construction. The issues and concerns reflect consultation with the public, agencies, and municipal departments. During the next stages of the project (Detail Design, Construction, and Monitoring), this list of commitments will serve as a reference to ensure that all issues and concerns are addressed.

Specific property issues have either been incorporated into the plan for the road, the streetscaping plan, or will be addressed when more detailed engineering information is available in Detail Design. All comments from the public have been included in the Appendices. (Note that names and addresses have been deleted from the comments in order to comply with the Municipal Freedom of Information and Privacy Act. The Region has maintained names and addresses in its files, and are not available to the general public.)

Comments received from agencies and municipal departments have also been incorporated in the plan and in Table 9.

TABLE 9: Summary of Issues and Overall Commitments

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
NATURAL/PHYSICAL FEATURES				
Soil Erosion & Sedimentation - construction could result in increased sedimentation to Red Hill Creek (see also section "Mount Albion Conservation Area")	- soils along the road are primarily silt/clay with some local fill (sec. 3.2.6)	- erosion control plan will be developed - contract specifications will include erosion & sediment control measures - Hamilton Region Conservation Authority (HRCA) will be circulated the erosion control plan (Mount Albion Conservation Area)	- erosion & sediment control features will be implemented and monitored	- sites revegetated following construction will be monitored for 2 years to determine effectiveness of revegetation (Mount Albion Conservation Area)
Trees & Landscaping - removal or damage to trees during construction of sidewalks and roads	- there are a large number of trees and some landscaping within the road right of way - a number of these trees have been identified by the public as important elements of the streetscape (sec. 3.2.4, see Appendix B, C, D for individual comments)	- a streetscaping and tree preservation plan will be developed. It will include: a tree planting plan, recommendations for location of sidewalks to minimize impacts to trees, and consideration of property owner concerns - the detail design will incorporate the streetscaping and tree preservation plan - the City Horticulturist will review the streetscaping plan for conformance to policies on tree planting - the public will view the plan during an open house for construction - landscaping should consider sight lines, consult Regional Roads Department, Development Section - contract specifications will incorporate tree protection measures - HRCA will review tree preservation plan	- implementation of the tree preservation plan will be monitored by an arborist - contract specifications will be implemented and monitored	- all planted trees and shrubs will be monitored by Public Works Department - where planted trees do not survive, they will be replaced

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Mount Albion Conservation Area - reduction of floodplain area through filling adjacent to the road - impacts to natural features of Environmentally Significant Area - water quality and erosion and sediment controls during and after construction - stormwater should be accommodated in open channels rather than a storm sewer system - impact on fish habitat	- development in this area is controlled by the Niagara Escarpment Commission (Niagara Escarpment Protected Area) and the Hamilton Region Conservation Authority (HRCA) (sec. 3.2.1) - stormwater in the area between Garth Street and Pritchard Road will be collected in storm sewers - stormwater in the section between Pritchard Road and Upper Mount Albion Road will be maintained in open ditches	Niagara Escarpment Commission (NEC) Requirements: - development permit required - review landscaping plan Hamilton Region Conservation Authority (HRCA) Requirements: - permit under Ontario Regulation 15/90 for work within Red Hill Creek ravine slopes - requires report detailing how the hydraulic characteristics of floodplain will be maintained Ministry of Natural Resources (MNR) Requirements: - require that detail design stage incorporate appropriate water quality and erosion and sediment controls - confirm culvert design does not require fish habitat compensation - contract documents will specify erosion and sediment control measures	Niagara Escarpment Requirements - meet development criteria for Escarpment Protection Area with regard to: - water quality and fisheries (to meet MOEE & MNR standards); - floodplain (HRCA) HRCA Requirements - see "erosion and sedimentation-construction" section of this table	- effectiveness of permanent erosion and sediment control measures will be monitored
Air Quality - dust during construction - fumes and noise from buses	- HSR buses are moving to natural gas from diesel fuel and this will reduce fumes - plan proposes the removal of gravel shoulders and this may reduce ongoing dust		- erosion and sediment control measures will be implemented and monitored through contract specifications - contract specifications to include application of calcium chloride and/or water during construction	

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Waste Materials - disposal of excess construction material			- excess material to be used on site where possible - contractor is required to obtain all necessary approvals for disposal of waste at a certified site	
Deer Crossing at Pritchard Road/Stone Church Road	- deer may be crossing at this location and at Mount Albion Conservation Area (sec. 3.2.5) - Traffic Department assesses need for deer warning signs based on data obtained from deer/vehicle collision or expectation of large number of deer in area - no structural solution to deer crossing in this area			
CULTURAL ENVIRONMENT /LAND USES				
Barton Stone United Church - property required for road reconstruction	- ESR identifies the need for some property (Figure 13, sheet 5) adjacent to Upper James Street intersection	- streetscaping plan will include the area adjacent to the church	- streetscaping plan will be implemented	
Access to Various Land Uses - maintain access to residential, institutional, and commercial land uses - maintain access along the road	- see traffic operations & pedestrian sections of this table	- determine driveway grades	- provide notice to owners/occupants if access is disrupted - notify Fire Department, Police Department and School Boards of construction timing and staging	

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Commercial Property - loss of useable space for storing vehicles	- proposed plan shows requirements for property adjacent to car dealership business to enable intersection to be reconstructed (Figure 13, sheet 5) - area is currently scheduled for construction in year 2000	- investigate ways to minimize impacts on outside car storage space - consult with car dealership prior to finalizing plans (Upper James Street intersection)	- implement plan to minimize impacts	
Tax Increases - road widening should not increase taxes	- all Regional Road construction is paid through general tax revenues, therefore no additional tax for adjacent property owners - adjacent property owners pay for sidewalks under the Local Improvement Act through the City of Hamilton			
TRANSPORTATION				
Study Area - need to extend boundaries to east of Upper Mount Albion Road (City of Stoney Creek, Engineering Department)	- boundaries extended			
- need to build road to four lanes or wider as originally planned especially at intersections which are commercial/institutional	- Regional roads are designated in the Official Plan for maximum development but the need for and staging of construction is dependent on the amount of development that is expected to occur - intersections of major arterial roads have been planned to have more than 3 lanes where north-south traffic volumes warrant the lanes			

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Traffic Operations - speeding is a problem in the residential section of the road - signalization of Redmond Drive intersection - signalization of Upper Sherman Avenue intersection - improvements to Upper James Street intersection - signalization of Nebo Road - cars using two-way left turning lane as a passing lane	- notify Regional Police Department of speeding problem - posted speed limit will remain 50 km/hr. - included on proposed plan (Figure 13, sheet 11) - included on proposed plan (Figure 13, sheet 12) - included on proposed plan (Figure 13, sheet 5) - provisions will be made for future signalization, when warrants are met - it is illegal to use this lane as a passing lane	- incorporate features which clearly delineate 2 lane road and discourage use of centre two-way left turning lane as a passing lane - consult with City of Hamilton Traffic Department re: interim improvements - investigate ways to construct two-way left turning lane that will minimize its desirability as a passing lane	- scheduled for 1995 - scheduled for 1995 - scheduled for 2000 (may be rescheduled) - scheduled for 1997 - construct two-way left turning lane as determined in detail design	- coordinate signals
Traffic Volumes - should not increase, as other Regional roads should accommodate more traffic than Stone Church Road (identified by public)	- traffic volumes expected to decrease following opening of Red Hill Creek Expressway and will increase to current levels (sec. 3.6.2) - other Regional roads such as Rymal Road are expected to carry more traffic			

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Accidents - reduce number of accidents - area at Dartnall Road intersection	- most accidents due to turning movements or improper passing (sec. 3, 6, 4) - two-way left turning lane should reduce this type of accident - intersection will be reconstructed as part of the Red Hill Creek Expressway-Dartnall Road interchange		- construct two-way left turning lane - scheduled for 1997	
Public Transit - demand for increased service and better waiting areas - disruption to bus route or bus stop - HSR requested that no bus bays be constructed - HSR requested that curbs be extended to Soney Creek due to extended bus service from Heritage Green to Hamilton in 1998, as curbs are better for bus stops	- bus bays have not been included on plan from Garth Street to Upper Mount Albion Road - curbs have been included on plan from Garth Street to Pritchard Road - no curbs are planned for the area between Pritchard Road and Upper Mount Albion Road because there are no plans for development in the near future - the plan can be amended to upgrade this section to an urban cross-section if development proceeds	- as each stage of project developed, HSR will be consulted to determine where bus stops will be located and the requirements for detail design	- consult with HSR to determine location of temporary bus stops or need for temporary reduction in service	

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Sidewalks and Pedestrian Crossing - HSR want to ensure that there is provisions for sidewalks on both sides of the road - public expressed strong desire for sidewalks - Pathways Committee recommended sidewalks to improve accessibility for disabled persons - public recommendation obtained for location of sidewalks in some areas	- sidewalks have been incorporated into the project design, however construction is dependent on the City of Hamilton obtaining funding under the Local Improvement Act	- final sidewalk locations to be determined based on: - minimize impact on trees/landscaping - improve safety for pedestrians (boulevard where possible) - boulevards designed so that cars cannot park and block sight lines - consider requirements of disabled and location of intersection crossings - intersections designed more pedestrian friendly		
Bicycle Facilities - provision of a space for cyclists - need for education of cyclists and drivers	- proposed plan includes a wider curb lane for cars and cyclists - it will be marked with bicycle symbols on the right side of the lane to show where cyclists should ride - Region will continue to educate public (i.e., Citizen's Guide, see sec. 4.2.4)	- will include wider curb lanes		- symbols will be painted on the road
Truck Traffic - Stone Church Road is a residential street and should not be a truck route - increase in truck traffic with wider road	- road is a designated truck route east of Upper James Street - changes to designation of truck routes are referred to Regional Truck Route Sub-committee - for more information on this sub-committee, please contact: Traffic Department (905) 546-4510 - trucks making local deliveries will still use the road			

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
SAFETY				
Emergency Access - access for Fire Department during construction as well as adequate water supply, alternate routes etc. - need for a pull-out area to allow fire trucks and ambulances to pass	- proposed plan includes sufficient space for emergency vehicles to pass	- advise Fire Department of provisions for water supply, alternate routes etc.	- advise Fire Department of construction scheduling, detour routes etc. - invite Fire Department to pre-construction meetings	
Disruption of Normal Traffic Flow - road closures or obstructions to normal flow of traffic during construction		- advise Police Department of schedule for starting construction	- advise Regional Police Department of road closures or obstructions to normal flow of traffic - invite Regional Police Department to pre-construction meetings	
ENGINEERING				
Construction Scheduling - demand for reconstruction of Upper James Street before schedule of year 2000 - do not trap residents between two sections of road being constructed	- Programming Department is currently re-examining ability to fund project sooner than year 2000		- examine scheduling of road construction to minimize access problems	

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Utilities/Municipal Services - damage to trees and landscaping - disruption to water service - conflict with utilities' future plans for expansion - disruption or relocation of utilities - disruption of private underground utilities in front of property on right-of-way (east of Upper James Street)		- determine relocation prior to finalizing streetscaping plan and location of sidewalks - contract specifications to include method of dealing with disruption to water services (if any) - confirm utility plans for expansion - confirm utility locations to deal with any conflicts that arise - coordinate utility relocations with utility companies - permit required for Trans Northern pipeline crossing (Mount Albion Conservation Area and south side of Stone Church Road) - refer to public comments on underground utilities in discussion with utility companies and construction plans	- ensure utility relocations do not result in additional removal of or damage to trees and landscaping - implement contract specifications - do not damage private underground utilities	

TABLE 9: Summary of Issues and Overall Commitments (Continued)

Issue/Concern	ESR Commitments	Detail Design Commitments	Construction Commitments	Post Construction Commitments
Drainage - no ditches or ditches insufficient to hold volume of water from road - culverts have been damaged in the past and/or do not allow water to pass through - elevation of road should be lowered west of Upper James Street - minimize impacts on driveways by not increasing/decreasing height of road	- proposed plan shows removal of ditches between Garth Street and Pritchard Road and connection of stormwater from road to sewers - storm sewer system will replace the need for culverts	- determine if it will be possible to lower road elevation and contact owner of car dealership re: results - take into consideration minimum cover depth required for watermain - take driveway grades into consideration		

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